



Full wwPDB X-ray Structure Validation Report ⓘ

May 7, 2025 – 04:38 PM EDT

PDB ID : 7JSR / pdb_00007jsr
Title : Crystal structure of the large glutamate dehydrogenase composed of 180 kDa subunits from Mycobacterium smegmatis
Authors : Lazaro, M.; Melero, R.; Huet, C.; Lopez-Alonso, J.P.; Delgado, S.; Dodu, A.; Bruch, E.M.; Abriata, L.A.; Alzari, P.M.; Valle, M.; Lisa, M.N.
Deposited on : 2020-08-15
Resolution : 6.27 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4-5-2 with Phenix2.0rc1
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0rc1
EDS : 3.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.006 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.43.1

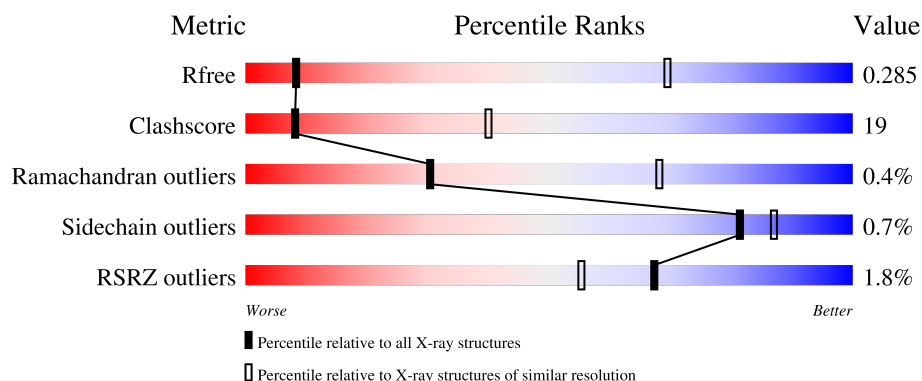
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 6.27 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1093 (8.50-4.00)
Clashscore	180529	1134 (8.50-4.00)
Ramachandran outliers	177936	1003 (8.50-4.00)
Sidechain outliers	177891	1026 (8.50-3.96)
RSRZ outliers	164620	1088 (8.50-4.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1611	
1	B	1611	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 24096 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called NAD-specific glutamate dehydrogenase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	1554	Total	C	N	O	S	Se	0	0	0
			12015	7553	2149	2279	7	27			
1	B	1564	Total	C	N	O	S	Se	0	0	0
			12081	7590	2162	2295	7	27			

There are 34 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-16	MSE	-	initiating methionine	UNP A0R1C2
A	-15	HIS	-	expression tag	UNP A0R1C2
A	-14	HIS	-	expression tag	UNP A0R1C2
A	-13	HIS	-	expression tag	UNP A0R1C2
A	-12	HIS	-	expression tag	UNP A0R1C2
A	-11	HIS	-	expression tag	UNP A0R1C2
A	-10	HIS	-	expression tag	UNP A0R1C2
A	-9	GLU	-	expression tag	UNP A0R1C2
A	-8	ASN	-	expression tag	UNP A0R1C2
A	-7	LEU	-	expression tag	UNP A0R1C2
A	-6	TYR	-	expression tag	UNP A0R1C2
A	-5	PHE	-	expression tag	UNP A0R1C2
A	-4	GLN	-	expression tag	UNP A0R1C2
A	-3	GLY	-	expression tag	UNP A0R1C2
A	-2	ALA	-	expression tag	UNP A0R1C2
A	-1	ALA	-	expression tag	UNP A0R1C2
A	0	SER	-	expression tag	UNP A0R1C2
B	-16	MSE	-	initiating methionine	UNP A0R1C2
B	-15	HIS	-	expression tag	UNP A0R1C2
B	-14	HIS	-	expression tag	UNP A0R1C2
B	-13	HIS	-	expression tag	UNP A0R1C2
B	-12	HIS	-	expression tag	UNP A0R1C2
B	-11	HIS	-	expression tag	UNP A0R1C2
B	-10	HIS	-	expression tag	UNP A0R1C2
B	-9	GLU	-	expression tag	UNP A0R1C2

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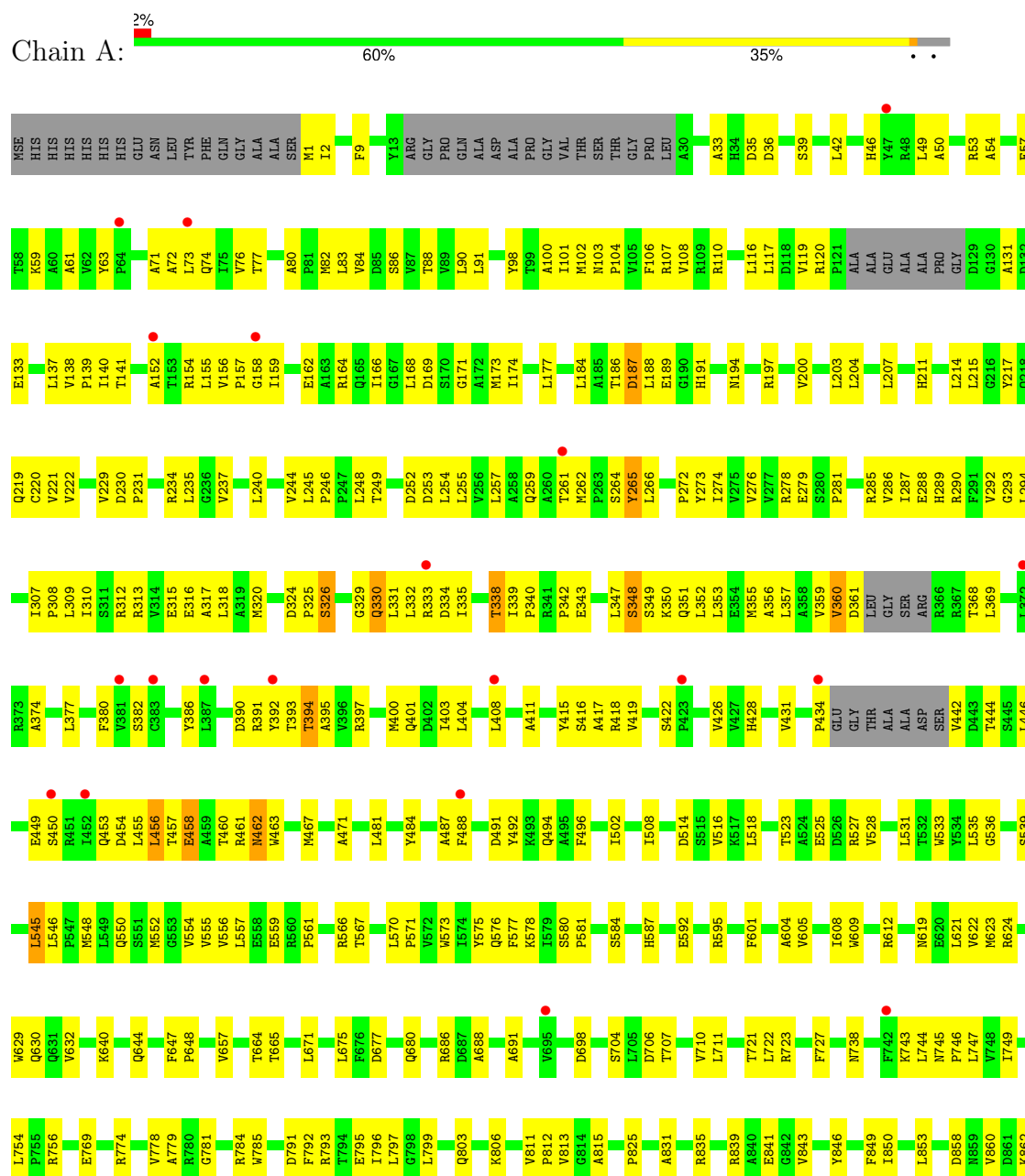
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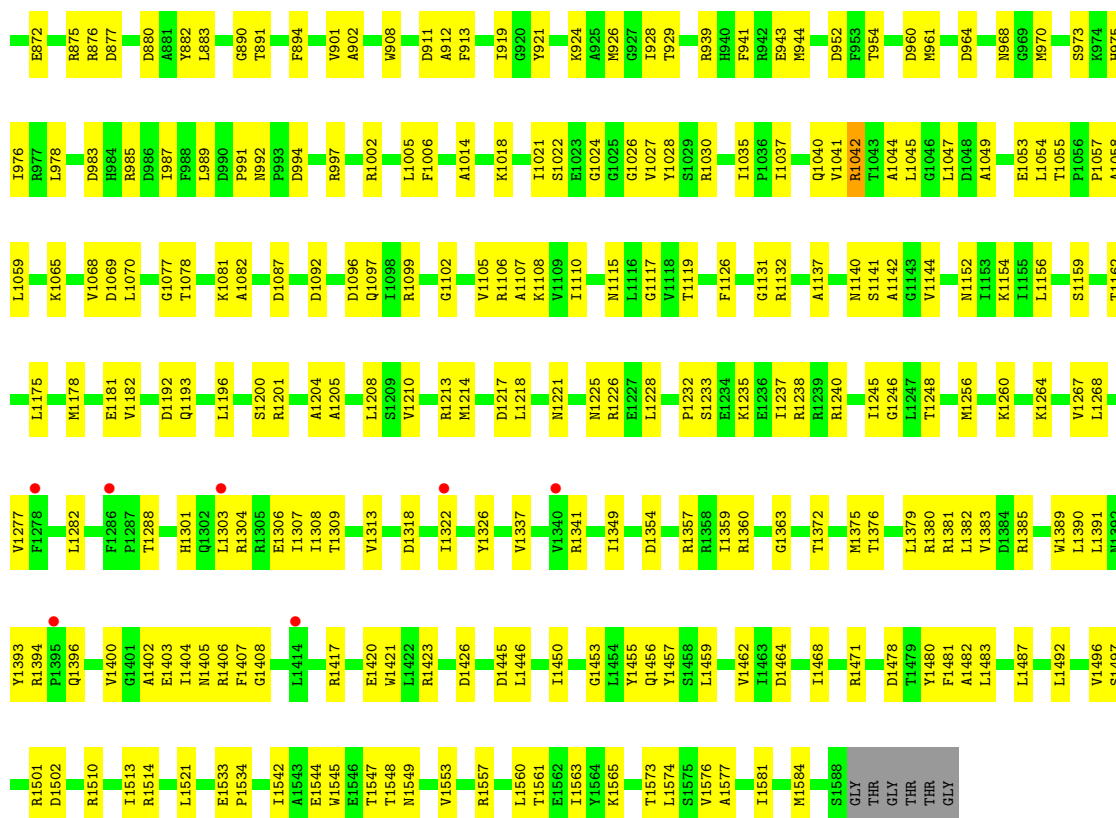
Chain	Residue	Modelled	Actual	Comment	Reference
B	-8	ASN	-	expression tag	UNP A0R1C2
B	-7	LEU	-	expression tag	UNP A0R1C2
B	-6	TYR	-	expression tag	UNP A0R1C2
B	-5	PHE	-	expression tag	UNP A0R1C2
B	-4	GLN	-	expression tag	UNP A0R1C2
B	-3	GLY	-	expression tag	UNP A0R1C2
B	-2	ALA	-	expression tag	UNP A0R1C2
B	-1	ALA	-	expression tag	UNP A0R1C2
B	0	SER	-	expression tag	UNP A0R1C2

3 Residue-property plots

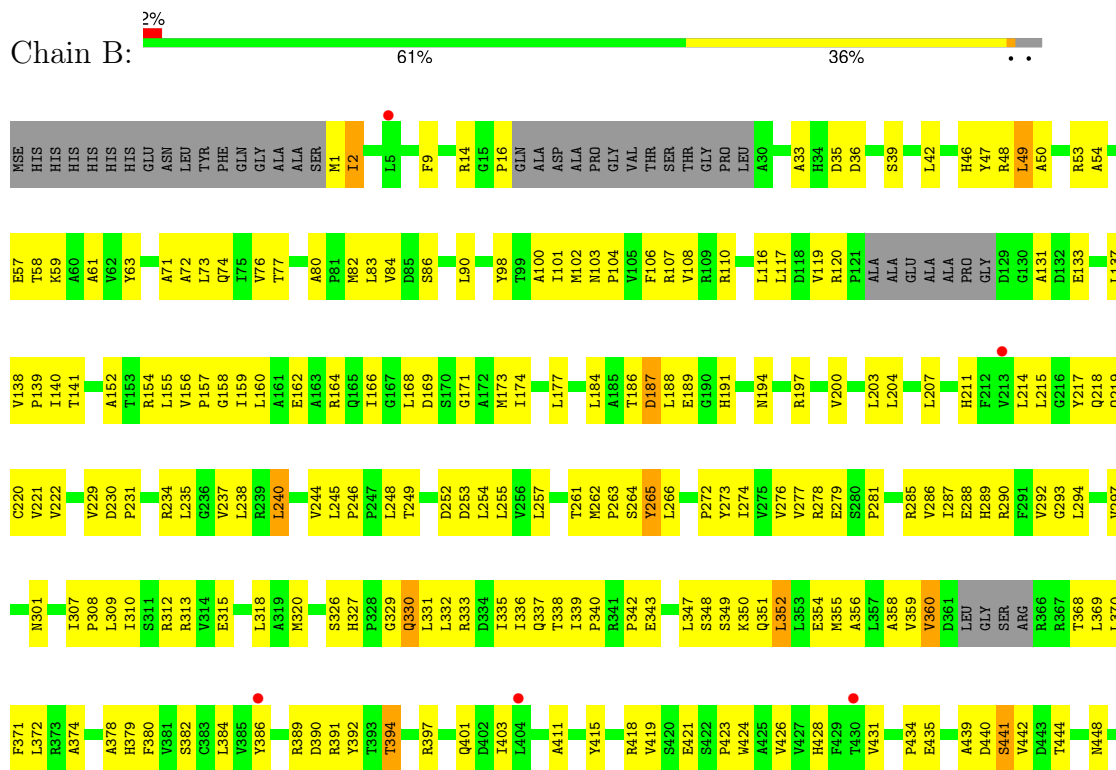
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: NAD-specific glutamate dehydrogenase





• Molecule 1: NAD-specific glutamate dehydrogenase



R1471	T1372	R1240	S1141	E1053	G969	N968	D858	S765	T628	S541	R451
D1478	M1375	A1241	A1142	L1054	G969	G969	N959	S765	W629	S541	I452
T1479	T1376	I1245	G1143	P1056	N970	N970	D859	V768	V632	E544	Q453
F1480	L1379	G1246	V1144	A1058	S973	S973	K862	E769	V633	L544	D454
A1482	R1380	A1253	I1152	L1059	K974	K974	R875	G770	R640	P547	L455
L1487	R1381	K1280	K1154	I1060	H975	H975	R876	R774	F647	N548	L456
L1382	L1156	L1263	L1157	K1061	I976	I976	D877	V778	P648	S551	T460
L1383	I1157	K1264	I1158	A1062	R977	R977	R877	V778	P648	S552	T460
S1487	S1159	K1264	S1159	L1064	V979	V979	D880	A779	V657	G553	N462
L1390	T1162	V1267	T1162	K1065	A980	A980	D881	R780	L658	V554	V463
L1391	L1162	L1288	L1162	A1066	D983	D983	Y882	G781	T664	V555	V463
N1392	L1175	L1277	L1175	P1067	H984	H984	V884	G782	T665	V556	D465
Y1393	L1176	V1277	L1176	V1068	R985	R985	V885	R784	L557	L557	D466
R1394	M1178	L1282	M1178	D1069	D986	D986	V886	R785	M467	E559	M467
P1395	L1282	L1282	L1282	L1070	R987	R987	D888	S786	I468	I468	I468
Q1396	F1286	F1286	E1181	N1073	F988	F988	K889	D787	A471	A471	A471
A1399	P1287	P1287	V1182	G1077	L989	L989	G990	F792	Y484	Y484	Y484
G1401	T1288	T1288	V1182	T1078	P991	P991	T991	R793	L570	L570	A487
A1402	R1289	R1289	D1192	K1081	D994	D994	V901	T794	P571	P571	F488
E1403	E1287	E1287	Q1193	A1082	R997	R997	A902	I796	V572	V572	D491
I1404	H1301	H1301	N1194	D1087	R997	R997	W908	G798	I574	I574	Y492
N1405	Q1302	Q1302	D1195	D1087	R1002	R1002	D911	L799	A691	A691	F496
R1406	L1303	L1303	M1197	D1092	F1006	F1006	A912	Q803	A692	A692	A497
F1407	R1304	R1304	S1200	D1092	F1006	F1006	F913	Q803	K578	K578	P498
G1408	R1305	R1305	R1201	D1096	A1014	A1014	A914	K806	I579	I579	I502
R1417	E1306	E1306	R1201	Q1097	A1014	A1014	S915	K806	S580	S580	I508
E1420	I1307	I1307	A1204	Q1097	K1018	K1018	I919	V811	P581	P581	I508
W1421	T1309	T1309	A1205	R1099	K1018	K1018	G920	P812	P583	P583	D514
L1422	V1313	V1313	L1208	G1102	I1021	I1021	Y921	A815	L705	L705	S515
R1423	D1318	D1318	S1209	G1102	S1022	S1022	K924	V821	D706	D706	S515
D1426	I1322	I1322	V1210	V1105	E1023	E1023	A925	V821	I707	I707	V516
D1445	I1322	I1322	R1213	A1106	G1024	G1024	M926	P825	F601	F601	K517
L1446	Y1326	Y1326	M1214	A1107	G1026	G1026	G927	P825	V619	V619	L518
I1450	Y1326	Y1326	D1217	K1108	Y1027	Y1027	I928	A831	A604	A604	V519
G1453	V1337	V1337	N1221	W1109	X1028	X1028	T929	A831	V605	V605	L520
L1454	V1340	V1340	N1221	I1110	S1029	S1029	F941	R835	T608	T608	T523
Y1455	R1341	R1341	N1225	E1112	R1030	R1030	R942	R835	A524	A524	E525
Q1456	I1349	I1349	R1226	G1113	I1035	I1035	R942	R839	D526	D526	E525
Y1457	D1354	D1354	E1227	G1114	P1036	P1036	M944	E841	R527	R527	V528
S1458	D1354	D1354	L1228	M1115	I1037	I1037	D952	G842	V613	V613	V528
L1459	R1357	R1357	P1232	L1116	Q1040	Q1040	D952	G842	F618	F618	L531
T1462	R1358	R1358	S1233	G1117	V1041	V1041	F953	V843	N619	N619	T532
T1463	I1359	I1359	E1235	V1118	R1042	R1042	T954	E943	V534	V534	V532
D1464	R1360	R1360	E1236	T1119	R1042	R1042	V955	E945	L621	L621	V534
T1468	G1363	G1363	I1237	R1132	L1045	L1045	V956	Y846	V748	V748	V535
GLY			R1239	A1137	G1046	G1046	D960	F849	I749	I749	G536
THR			R1238	A1137	G1046	G1046	M961	R850	L754	L754	S539
THR			R1239	A1137	G1046	G1046	D960	R850	L754	L754	A540
GLY			R1239	A1137	G1046	G1046	D960	R850	L754	L754	A540

4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	151.56Å 253.54Å 399.72Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	24.98 – 6.27 24.98 – 6.27	Depositor EDS
% Data completeness (in resolution range)	98.4 (24.98-6.27) 84.9 (24.98-6.27)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.67 (at 6.51Å)	Xtriage
Refinement program	PHENIX 1.21.1_5286	Depositor
R, R_{free}	0.226 , 0.284 0.228 , 0.285	Depositor DCC
R_{free} test set	875 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å ²)	329.5	Xtriage
Anisotropy	0.347	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.25 , 420.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtriage
Estimated twinning fraction	0.046 for 1/2*h-1/2*k,-3/2*h-1/2*k,-l 0.058 for 1/2*h+1/2*k,3/2*h-1/2*k,-l	Xtriage
F_o, F_c correlation	0.87	EDS
Total number of atoms	24096	wwPDB-VP
Average B, all atoms (Å ²)	456.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.07% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.32	0/12213	0.64	5/16558 (0.0%)
1	B	0.33	0/12281	0.67	13/16652 (0.1%)
All	All	0.33	0/24494	0.66	18/33210 (0.1%)

There are no bond length outliers.

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	1237	ILE	N-CA-C	9.75	119.78	110.42
1	B	49	LEU	N-CA-C	9.41	121.22	110.97
1	B	1239	ARG	N-CA-C	-8.06	102.45	111.07
1	B	1042	ARG	N-CA-C	7.72	119.69	111.28
1	B	1194	ASN	N-CA-C	6.30	119.12	111.82
1	A	1042	ARG	N-CA-C	6.22	118.06	111.28
1	B	360	VAL	CB-CA-C	-6.20	102.22	112.26
1	B	47	TYR	N-CA-C	-6.08	104.21	111.69
1	B	360	VAL	N-CA-C	6.06	118.66	111.09
1	B	48	ARG	N-CA-C	5.83	117.64	111.28
1	A	1044	ALA	N-CA-C	-5.76	106.25	113.28
1	B	358	ALA	N-CA-C	-5.59	105.09	111.07
1	B	1192	ASP	N-CA-C	-5.56	105.22	111.28
1	B	352	LEU	N-CA-C	-5.44	105.00	111.69
1	A	1044	ALA	N-CA-CB	5.34	118.85	110.46
1	A	456	LEU	N-CA-C	-5.12	107.16	113.41
1	B	1238	ARG	CA-C-O	5.10	125.25	119.18
1	A	458	GLU	N-CA-C	5.03	117.65	111.82

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	12015	0	11963	468	0
1	B	12081	0	12022	469	0
All	All	24096	0	23985	919	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 19.

All (919) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1483:LEU:HD23	1:A:1542:ILE:HG12	1.22	1.13
1:A:1483:LEU:CD2	1:A:1542:ILE:HG12	1.87	1.04
1:A:1226:ARG:HD3	1:A:1233:SER:HA	1.43	1.00
1:B:1226:ARG:HD3	1:B:1233:SER:HA	1.44	0.98
1:B:355:MSE:SE	1:B:371:PHE:CD2	2.68	0.96
1:B:335:ILE:HG23	1:B:359:VAL:HG11	1.48	0.94
1:A:1483:LEU:HD23	1:A:1542:ILE:CG1	1.98	0.92
1:B:484:TYR:HE1	1:B:567:THR:HB	1.33	0.91
1:A:484:TYR:HE1	1:A:567:THR:HB	1.35	0.89
1:A:991:PRO:HD2	1:A:1022:SER:HB2	1.55	0.88
1:B:991:PRO:HD2	1:B:1022:SER:HB2	1.56	0.87
1:A:50:ALA:HB2	1:A:76:VAL:HG21	1.59	0.84
1:B:1081:LYS:HB2	1:B:1099:ARG:HD3	1.57	0.83
1:B:1045:LEU:HD23	1:B:1047:LEU:HD11	1.59	0.83
1:B:50:ALA:HB2	1:B:76:VAL:HG21	1.59	0.82
1:B:403:ILE:HD13	1:B:455:LEU:HB3	1.64	0.80
1:A:1081:LYS:HB2	1:A:1099:ARG:HD3	1.62	0.80
1:B:928:ILE:HG13	1:B:1142:ALA:HB1	1.64	0.80
1:A:556:VAL:O	1:B:541:SER:HB3	1.82	0.79
1:A:584:SER:HB2	1:A:624:ARG:HH12	1.48	0.79
1:A:207:LEU:HA	1:A:211:HIS:HB2	1.65	0.79
1:A:332:LEU:HG	1:A:335:ILE:HD12	1.66	0.78
1:B:1193:GLN:HE22	1:B:1260:LYS:NZ	1.82	0.78
1:A:862:LYS:HD3	1:A:1162:THR:HB	1.66	0.77
1:B:222:VAL:HB	1:B:286:VAL:HB	1.67	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:SER:H	1:A:42:LEU:HD12	1.48	0.77
1:A:203:LEU:HD13	1:A:308:PRO:HD2	1.66	0.77
1:B:215:LEU:HG	1:B:293:GLY:HA2	1.65	0.77
1:B:584:SER:HB2	1:B:624:ARG:HH12	1.49	0.77
1:A:215:LEU:HG	1:A:293:GLY:HA2	1.64	0.77
1:A:928:ILE:HG13	1:A:1142:ALA:HB1	1.65	0.77
1:B:332:LEU:HG	1:B:335:ILE:HD12	1.66	0.76
1:B:207:LEU:HA	1:B:211:HIS:HB2	1.67	0.76
1:A:222:VAL:HB	1:A:286:VAL:HB	1.67	0.76
1:B:39:SER:H	1:B:42:LEU:HD12	1.50	0.76
1:B:1037:ILE:HG13	1:B:1054:LEU:HD13	1.67	0.76
1:A:1037:ILE:HG13	1:A:1054:LEU:HD13	1.67	0.75
1:B:203:LEU:HD13	1:B:308:PRO:HD2	1.69	0.75
1:B:332:LEU:HD23	1:B:356:ALA:HB1	1.68	0.75
1:A:110:ARG:HG2	1:A:116:LEU:HA	1.69	0.75
1:A:80:ALA:HB3	1:A:83:LEU:HD21	1.69	0.74
1:A:1456:GLN:HA	1:A:1459:LEU:HD12	1.68	0.74
1:A:84:VAL:HG11	1:A:103:ASN:HD22	1.53	0.74
1:A:391:ARG:HH12	1:A:462:ASN:HB2	1.51	0.74
1:B:1065:LYS:O	1:B:1106:ARG:NH2	2.20	0.73
1:B:84:VAL:HG11	1:B:103:ASN:HD22	1.52	0.73
1:B:1282:LEU:HB2	1:B:1308:ILE:HD11	1.71	0.73
1:B:349:SER:HA	1:B:352:LEU:HB2	1.70	0.73
1:A:1193:GLN:OE1	1:A:1260:LYS:NZ	2.22	0.73
1:A:987:ILE:HD13	1:A:1059:LEU:HD23	1.69	0.73
1:B:110:ARG:HG2	1:B:116:LEU:HA	1.69	0.72
1:B:862:LYS:HD3	1:B:1162:THR:HB	1.71	0.72
1:A:330:GLN:HG2	1:B:297:VAL:HG22	1.71	0.72
1:A:484:TYR:CE1	1:A:567:THR:HB	2.22	0.72
1:A:1232:PRO:HB2	1:A:1237:ILE:HG13	1.72	0.72
1:B:484:TYR:CE1	1:B:567:THR:HB	2.21	0.72
1:A:1381:ARG:HH21	1:A:1514:ARG:NH2	1.88	0.72
1:B:1456:GLN:HA	1:B:1459:LEU:HD12	1.72	0.72
1:B:391:ARG:HH12	1:B:462:ASN:HB2	1.54	0.71
1:A:338:THR:N	1:A:418:ARG:HH21	1.88	0.71
1:A:462:ASN:OD1	1:A:463:TRP:N	2.24	0.71
1:B:721:THR:HA	1:B:744:LEU:HD23	1.72	0.71
1:A:1282:LEU:HB2	1:A:1308:ILE:HD11	1.72	0.71
1:B:987:ILE:HD13	1:B:1059:LEU:HD23	1.70	0.71
1:A:793:ARG:HH12	1:A:797:LEU:HD22	1.55	0.71
1:B:1232:PRO:HB2	1:B:1237:ILE:HG13	1.71	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:403:ILE:HD13	1:A:455:LEU:HB3	1.71	0.70
1:A:166:ILE:HD11	1:A:237:VAL:HG13	1.73	0.70
1:B:166:ILE:HD11	1:B:237:VAL:HG13	1.72	0.70
1:A:330:GLN:H	1:B:297:VAL:HG13	1.56	0.70
1:A:778:VAL:HG12	1:A:812:PRO:HB3	1.73	0.70
1:B:80:ALA:HB3	1:B:83:LEU:HD21	1.74	0.69
1:B:340:PRO:HD2	1:B:384:LEU:HD21	1.74	0.69
1:B:778:VAL:HG12	1:B:812:PRO:HB3	1.74	0.69
1:A:721:THR:HA	1:A:744:LEU:HD23	1.74	0.69
1:B:1014:ALA:HA	1:B:1027:VAL:HG11	1.73	0.69
1:A:882:TYR:O	1:A:883:LEU:HG	1.91	0.69
1:B:882:TYR:O	1:B:883:LEU:HG	1.92	0.69
1:A:754:LEU:HD13	1:A:756:ARG:HG2	1.73	0.69
1:B:1394:ARG:HH12	1:B:1406:ARG:HD2	1.58	0.69
1:A:723:ARG:HH12	1:A:858:ASP:CG	2.01	0.68
1:B:793:ARG:HH12	1:B:797:LEU:HD22	1.57	0.68
1:A:166:ILE:HG23	1:A:173:MSE:HE1	1.75	0.68
1:B:539:SER:HB2	1:B:573:TRP:CE2	2.28	0.68
1:B:1381:ARG:HH21	1:B:1514:ARG:NH2	1.90	0.68
1:A:1014:ALA:HA	1:A:1027:VAL:HG11	1.76	0.68
1:B:166:ILE:HG23	1:B:173:MSE:HE1	1.75	0.68
1:A:677:ASP:HB3	1:A:680:GLN:HG2	1.76	0.68
1:B:355:MSE:SE	1:B:371:PHE:CE2	2.97	0.67
1:B:359:VAL:HA	1:B:369:LEU:CD2	2.24	0.67
1:A:612:ARG:O	1:A:738:ASN:ND2	2.27	0.67
1:B:612:ARG:O	1:B:738:ASN:ND2	2.26	0.67
1:B:677:ASP:HB3	1:B:680:GLN:HG2	1.77	0.67
1:A:107:ARG:N	1:A:120:ARG:O	2.27	0.67
1:A:1268:LEU:HD11	1:A:1306:GLU:HG3	1.77	0.67
1:B:53:ARG:NH2	1:B:57:GLU:O	2.27	0.67
1:B:246:PRO:O	1:B:290:ARG:NH2	2.27	0.67
1:B:110:ARG:NH2	1:B:133:GLU:OE2	2.27	0.67
1:A:1394:ARG:HH12	1:A:1406:ARG:HD2	1.59	0.67
1:B:368:THR:HG21	1:B:456:LEU:HB2	1.75	0.67
1:B:711:LEU:N	1:B:711:LEU:HD12	2.10	0.67
1:A:330:GLN:HA	1:A:333:ARG:HB2	1.76	0.67
1:B:107:ARG:N	1:B:120:ARG:O	2.28	0.67
1:B:1045:LEU:HD21	1:B:1062:ALA:HB1	1.78	0.66
1:B:723:ARG:HH12	1:B:858:ASP:CG	2.03	0.66
1:A:1501:ARG:HG2	1:A:1510:ARG:HD3	1.77	0.66
1:B:1501:ARG:HG2	1:B:1510:ARG:HD3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:921:TYR:HB3	1:A:926:MSE:SE	2.45	0.66
1:B:754:LEU:HD13	1:B:756:ARG:HG2	1.78	0.66
1:B:330:GLN:HA	1:B:333:ARG:HB2	1.77	0.66
1:A:334:ASP:OD1	1:B:301:ASN:ND2	2.29	0.66
1:A:539:SER:HB2	1:A:573:TRP:CE2	2.30	0.66
1:B:525:GLU:HG3	1:B:528:VAL:HB	1.77	0.66
1:A:80:ALA:H	1:A:83:LEU:HD11	1.61	0.65
1:A:347:LEU:HD21	1:A:352:LEU:HB2	1.76	0.65
1:A:710:VAL:HG12	1:A:711:LEU:HD12	1.78	0.65
1:B:545:LEU:HA	1:B:548:MSE:SE	2.46	0.65
1:B:1193:GLN:HE22	1:B:1260:LYS:HZ2	1.44	0.65
1:B:332:LEU:HD21	1:B:360:VAL:HG21	1.79	0.65
1:B:379:HIS:CD2	1:B:435:GLU:HA	2.31	0.65
1:B:382:SER:OG	1:B:428:HIS:NE2	2.27	0.65
1:A:110:ARG:NH2	1:A:133:GLU:OE2	2.30	0.65
1:B:462:ASN:OD1	1:B:463:TRP:N	2.27	0.65
1:B:1417:ARG:NH2	1:B:1420:GLU:OE1	2.29	0.65
1:A:657:VAL:CG1	1:A:711:LEU:HD11	2.27	0.65
1:B:351:GLN:HA	1:B:354:GLU:CD	2.23	0.64
1:B:710:VAL:HG12	1:B:711:LEU:HD12	1.79	0.64
1:B:1057:PRO:HB3	1:B:1097:GLN:OE1	1.97	0.64
1:A:101:ILE:HA	1:A:138:VAL:HG22	1.78	0.64
1:B:191:HIS:HB3	1:B:279:GLU:HG3	1.77	0.64
1:A:1175:LEU:HA	1:A:1178:MSE:HE2	1.80	0.64
1:B:53:ARG:HG2	1:B:54:ALA:H	1.63	0.64
1:A:315:GLU:HA	1:A:318:LEU:HB2	1.80	0.64
1:A:919:ILE:O	1:A:1154:LYS:NZ	2.26	0.64
1:A:1301:HIS:O	1:A:1304:ARG:NH1	2.28	0.64
1:A:941:PHE:HE2	1:A:1070:LEU:HD13	1.63	0.64
1:A:1217:ASP:OD1	1:A:1221:ASN:ND2	2.30	0.64
1:B:973:SER:HB3	1:B:976:ILE:HG13	1.80	0.64
1:A:1502:ASP:N	1:A:1502:ASP:OD1	2.31	0.64
1:A:317:ALA:HB1	1:A:352:LEU:HD22	1.80	0.63
1:B:221:VAL:HG22	1:B:287:ILE:HG12	1.78	0.63
1:A:53:ARG:HG2	1:A:54:ALA:H	1.64	0.63
1:A:221:VAL:HG22	1:A:287:ILE:HG12	1.79	0.63
1:B:657:VAL:HG12	1:B:711:LEU:HD11	1.81	0.63
1:B:1349:ILE:HG23	1:B:1408:GLY:HA2	1.81	0.63
1:A:191:HIS:HB3	1:A:279:GLU:HG3	1.79	0.63
1:A:382:SER:OG	1:A:428:HIS:NE2	2.27	0.63
1:B:545:LEU:HD12	1:B:548:MSE:SE	2.49	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:53:ARG:NH2	1:A:57:GLU:O	2.28	0.62
1:A:200:VAL:HG22	1:A:255:LEU:HD22	1.81	0.62
1:B:921:TYR:HB3	1:B:926:MSE:SE	2.50	0.62
1:B:1175:LEU:HA	1:B:1178:MSE:HE2	1.81	0.62
1:B:657:VAL:CG1	1:B:711:LEU:HD11	2.30	0.62
1:B:941:PHE:HE2	1:B:1070:LEU:HD13	1.64	0.62
1:B:347:LEU:HD11	1:B:352:LEU:HA	1.81	0.62
1:B:1181:GLU:OE2	1:B:1288:THR:N	2.31	0.62
1:B:1502:ASP:OD1	1:B:1502:ASP:N	2.32	0.62
1:A:369:LEU:HB2	1:A:386:TYR:HB2	1.81	0.62
1:A:657:VAL:HG12	1:A:711:LEU:HD11	1.80	0.62
1:A:1057:PRO:HB3	1:A:1097:GLN:OE1	1.98	0.62
1:A:723:ARG:NH1	1:A:858:ASP:OD1	2.33	0.62
1:B:1192:ASP:OD1	1:B:1360:ARG:NH1	2.33	0.62
1:B:1268:LEU:HD11	1:B:1306:GLU:HG3	1.80	0.62
1:A:1192:ASP:OD1	1:A:1360:ARG:NH1	2.33	0.62
1:A:525:GLU:HG3	1:A:528:VAL:HB	1.81	0.61
1:A:711:LEU:HD12	1:A:711:LEU:N	2.15	0.61
1:A:1483:LEU:HD23	1:A:1542:ILE:CD1	2.30	0.61
1:B:200:VAL:HG22	1:B:255:LEU:HD22	1.80	0.61
1:A:330:GLN:CG	1:B:297:VAL:HG22	2.30	0.61
1:A:973:SER:HB3	1:A:976:ILE:HG13	1.82	0.61
1:A:1417:ARG:NH2	1:A:1420:GLU:OE1	2.32	0.61
1:B:723:ARG:NH1	1:B:858:ASP:OD1	2.34	0.61
1:A:357:LEU:O	1:A:360:VAL:HG12	2.00	0.61
1:A:891:THR:O	1:A:891:THR:HG22	2.01	0.61
1:B:315:GLU:HA	1:B:318:LEU:HB2	1.82	0.61
1:B:779:ALA:HB1	1:B:815:ALA:HB2	1.82	0.61
1:A:246:PRO:O	1:A:290:ARG:NH2	2.33	0.61
1:B:1267:VAL:HB	1:B:1309:THR:HG23	1.83	0.61
1:A:1349:ILE:HG23	1:A:1408:GLY:HA2	1.81	0.61
1:B:54:ALA:HB3	1:B:57:GLU:HB2	1.83	0.60
1:A:1423:ARG:HD2	1:A:1482:ALA:HA	1.82	0.60
1:B:1115:ASN:OD1	1:B:1140:ASN:ND2	2.34	0.60
1:B:570:LEU:HD12	1:B:571:PRO:HD2	1.83	0.60
1:A:1115:ASN:OD1	1:A:1140:ASN:ND2	2.35	0.60
1:A:330:GLN:OE1	1:B:301:ASN:N	2.35	0.60
1:B:101:ILE:HA	1:B:138:VAL:HG22	1.84	0.60
1:A:523:THR:HG23	1:A:525:GLU:H	1.67	0.60
1:B:335:ILE:CG2	1:B:359:VAL:HG11	2.29	0.60
1:B:1055:THR:HG23	1:B:1058:ALA:H	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1359:ILE:HG21	1:B:1376:THR:HG23	1.84	0.59
1:B:1423:ARG:HD2	1:B:1482:ALA:HA	1.83	0.59
1:A:554:VAL:HA	1:A:581:PRO:HA	1.84	0.59
1:B:245:LEU:O	1:B:290:ARG:NH1	2.35	0.59
1:A:1225:ASN:HB3	1:A:1228:LEU:HB2	1.84	0.59
1:B:313:ARG:NH1	1:B:347:LEU:O	2.35	0.59
1:A:331:LEU:HD11	1:A:422:SER:HB2	1.85	0.59
1:B:379:HIS:NE2	1:B:435:GLU:HA	2.18	0.59
1:B:71:ALA:O	1:B:140:ILE:N	2.36	0.59
1:B:919:ILE:O	1:B:1154:LYS:NZ	2.25	0.59
1:B:440:ASP:OD1	1:B:441:SER:N	2.36	0.59
1:B:347:LEU:HD21	1:B:352:LEU:CB	2.32	0.58
1:B:1421:TRP:CD1	1:B:1481:PHE:HD2	2.21	0.58
1:A:332:LEU:HA	1:A:335:ILE:HD12	1.85	0.58
1:B:1225:ASN:HB3	1:B:1228:LEU:HB2	1.85	0.58
1:B:318:LEU:HD21	1:B:333:ARG:HE	1.68	0.58
1:B:347:LEU:HD21	1:B:352:LEU:HB2	1.84	0.58
1:A:657:VAL:CG1	1:A:711:LEU:CD1	2.82	0.58
1:B:80:ALA:H	1:B:83:LEU:HD11	1.69	0.58
1:B:369:LEU:HB2	1:B:386:TYR:HB2	1.86	0.58
1:A:229:VAL:HG23	1:A:244:VAL:HG13	1.86	0.58
1:A:349:SER:O	1:A:353:LEU:HG	2.04	0.58
1:B:1426:ASP:OD1	1:B:1455:TYR:OH	2.21	0.58
1:A:664:THR:HG23	1:A:698:ASP:HB3	1.86	0.58
1:A:1055:THR:HG23	1:A:1058:ALA:H	1.68	0.58
1:B:343:GLU:H	1:B:343:GLU:CD	2.11	0.58
1:B:1200:SER:HB3	1:B:1322:ILE:HD11	1.86	0.58
1:A:779:ALA:HB1	1:A:815:ALA:HB2	1.85	0.57
1:B:523:THR:HG23	1:B:525:GLU:H	1.69	0.57
1:A:1549:ASN:HB2	1:A:1553:VAL:HB	1.87	0.57
1:A:313:ARG:NH1	1:A:347:LEU:O	2.37	0.57
1:A:1421:TRP:CD1	1:A:1481:PHE:HD2	2.22	0.57
1:A:774:ARG:HH22	1:A:880:ASP:CG	2.12	0.57
1:A:318:LEU:HD21	1:A:333:ARG:HE	1.68	0.57
1:B:664:THR:HG23	1:B:698:ASP:HB3	1.87	0.57
1:A:1214:MSE:HG2	1:A:1326:TYR:CD2	2.40	0.57
1:A:784:ARG:HH11	1:A:799:LEU:HD11	1.70	0.57
1:A:1181:GLU:OE2	1:A:1288:THR:N	2.30	0.56
1:B:378:ALA:HB2	1:B:439:ALA:HA	1.87	0.56
1:A:419:VAL:HB	1:B:419:VAL:HB	1.87	0.56
1:B:774:ARG:HH22	1:B:880:ASP:CG	2.13	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:229:VAL:HG23	1:B:244:VAL:HG13	1.86	0.56
1:B:350:LYS:HG3	1:B:351:GLN:N	2.21	0.56
1:A:54:ALA:HB3	1:A:57:GLU:HB2	1.87	0.56
1:B:944:MSE:SE	1:B:1132:ARG:HE	2.38	0.56
1:B:559:GLU:HA	1:B:576:GLN:O	2.06	0.56
1:B:1217:ASP:OD1	1:B:1221:ASN:ND2	2.38	0.56
1:A:71:ALA:O	1:A:140:ILE:N	2.37	0.56
1:A:359:VAL:C	1:A:361:ASP:H	2.13	0.56
1:B:554:VAL:HA	1:B:581:PRO:HA	1.86	0.56
1:B:1193:GLN:NE2	1:B:1260:LYS:NZ	2.52	0.56
1:A:1267:VAL:HB	1:A:1309:THR:HG23	1.87	0.56
1:B:1400:VAL:HA	1:B:1403:GLU:OE2	2.06	0.56
1:A:220:CYS:O	1:A:288:GLU:N	2.26	0.56
1:A:259:GLN:HB3	1:A:377:LEU:HD22	1.87	0.56
1:A:1381:ARG:HH21	1:A:1514:ARG:HH22	1.52	0.56
1:B:1077:GLY:O	1:B:1117:GLY:HA2	2.05	0.56
1:A:1077:GLY:O	1:A:1117:GLY:HA2	2.06	0.56
1:A:989:LEU:HD13	1:A:1041:VAL:HG11	1.88	0.55
1:B:1105:VAL:HG11	1:B:1110:ILE:HD11	1.87	0.55
1:B:1549:ASN:HB2	1:B:1553:VAL:HB	1.87	0.55
1:A:514:ASP:N	1:A:536:GLY:O	2.40	0.55
1:A:415:TYR:OH	1:B:389:ARG:NH2	2.39	0.55
1:A:1081:LYS:HB2	1:A:1099:ARG:CD	2.35	0.55
1:A:1389:TRP:HB2	1:A:1457:TYR:HE1	1.72	0.55
1:B:140:ILE:HG22	1:B:141:THR:O	2.07	0.55
1:B:359:VAL:HA	1:B:369:LEU:HD23	1.88	0.55
1:A:793:ARG:NH1	1:A:797:LEU:HD22	2.21	0.55
1:A:397:ARG:NH1	1:A:415:TYR:OH	2.40	0.55
1:B:1210:VAL:O	1:B:1214:MSE:HG3	2.07	0.55
1:A:350:LYS:HG3	1:A:351:GLN:N	2.22	0.55
1:B:1381:ARG:HH21	1:B:1514:ARG:HH22	1.54	0.55
1:B:781:GLY:HA3	1:B:815:ALA:O	2.07	0.55
1:B:1372:THR:HA	1:B:1375:MSE:HE3	1.88	0.55
1:A:1200:SER:HB3	1:A:1322:ILE:HD11	1.89	0.55
1:A:1379:LEU:O	1:A:1383:VAL:HG13	2.06	0.55
1:B:1301:HIS:O	1:B:1304:ARG:NH1	2.35	0.55
1:A:781:GLY:HA3	1:A:815:ALA:O	2.07	0.54
1:B:989:LEU:HD13	1:B:1041:VAL:HG11	1.89	0.54
1:A:944:MSE:HE3	1:A:1108:LYS:HB3	1.89	0.54
1:A:1081:LYS:O	1:A:1102:GLY:N	2.39	0.54
1:A:1421:TRP:O	1:A:1423:ARG:NH1	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:184:LEU:HD21	1:B:254:LEU:HD11	1.89	0.54
1:A:484:TYR:HA	1:A:487:ALA:HB3	1.89	0.54
1:B:1214:MSE:HG2	1:B:1326:TYR:CD2	2.42	0.54
1:A:391:ARG:NH1	1:A:462:ASN:HB2	2.20	0.54
1:B:110:ARG:NE	1:B:133:GLU:OE1	2.40	0.54
1:A:457:THR:O	1:A:460:THR:OG1	2.24	0.54
1:A:559:GLU:HA	1:A:576:GLN:O	2.07	0.54
1:B:110:ARG:HA	1:B:117:LEU:HG	1.90	0.54
1:B:657:VAL:CG1	1:B:711:LEU:CD1	2.85	0.54
1:A:570:LEU:HD12	1:A:571:PRO:HD2	1.90	0.54
1:B:1533:GLU:HG2	1:B:1534:PRO:HD2	1.89	0.54
1:A:187:ASP:HB3	1:A:197:ARG:HD2	1.90	0.54
1:A:245:LEU:O	1:A:290:ARG:NH1	2.37	0.54
1:B:944:MSE:HE3	1:B:1108:LYS:HB3	1.89	0.54
1:B:1081:LYS:O	1:B:1102:GLY:N	2.40	0.54
1:A:90:LEU:HD11	1:A:155:LEU:HD12	1.90	0.53
1:A:831:ALA:O	1:A:835:ARG:NE	2.40	0.53
1:B:264:SER:C	1:B:266:LEU:H	2.16	0.53
1:B:1196:LEU:HD22	1:B:1318:ASP:HA	1.90	0.53
1:B:1394:ARG:NH1	1:B:1406:ARG:HD2	2.23	0.53
1:A:944:MSE:SE	1:A:1132:ARG:HE	2.41	0.53
1:A:1400:VAL:HA	1:A:1403:GLU:OE2	2.08	0.53
1:B:187:ASP:HB3	1:B:197:ARG:HD2	1.90	0.53
1:B:546:LEU:HD11	1:B:556:VAL:HB	1.89	0.53
1:B:1081:LYS:HB2	1:B:1099:ARG:CD	2.31	0.53
1:A:463:TRP:O	1:A:467:MSE:HG3	2.08	0.53
1:B:1238:ARG:HA	1:B:1241:ALA:HB3	1.89	0.53
1:A:1359:ILE:HG21	1:A:1376:THR:HG23	1.89	0.53
1:B:162:GLU:HB3	1:B:237:VAL:HG12	1.91	0.53
1:B:463:TRP:O	1:B:467:MSE:HG3	2.08	0.53
1:A:110:ARG:HA	1:A:117:LEU:HG	1.91	0.53
1:A:217:TYR:O	1:A:234:ARG:HA	2.09	0.53
1:A:952:ASP:HA	1:A:975:HIS:HB3	1.91	0.53
1:B:276:VAL:HG22	1:B:290:ARG:HG2	1.91	0.53
1:A:1391:LEU:HA	1:A:1396:GLN:HE22	1.74	0.53
1:B:457:THR:O	1:B:460:THR:OG1	2.26	0.53
1:B:566:ARG:HD3	1:B:570:LEU:HB3	1.91	0.53
1:B:1379:LEU:O	1:B:1383:VAL:HG13	2.08	0.53
1:A:264:SER:C	1:A:266:LEU:H	2.17	0.53
1:A:604:ALA:O	1:A:608:ILE:HG13	2.09	0.53
1:A:621:LEU:HD22	1:A:665:THR:HG21	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1372:THR:HA	1:A:1375:MSE:HE3	1.91	0.53
1:A:1533:GLU:HG2	1:A:1534:PRO:HD2	1.89	0.53
1:B:307:ILE:HG21	1:B:310:ILE:HG12	1.90	0.53
1:B:1337:VAL:O	1:B:1341:ARG:HG3	2.09	0.53
1:B:1391:LEU:HA	1:B:1396:GLN:HE22	1.74	0.53
1:A:162:GLU:HB3	1:A:237:VAL:HG12	1.90	0.53
1:B:952:ASP:HA	1:B:975:HIS:HB3	1.90	0.53
1:A:276:VAL:HG22	1:A:290:ARG:HG2	1.90	0.52
1:A:657:VAL:HG11	1:A:711:LEU:CD1	2.39	0.52
1:A:169:ASP:HB3	1:A:235:LEU:HB3	1.91	0.52
1:A:343:GLU:H	1:A:343:GLU:CD	2.16	0.52
1:B:793:ARG:NH1	1:B:797:LEU:HD22	2.23	0.52
1:B:1421:TRP:O	1:B:1423:ARG:NH1	2.41	0.52
1:B:1497:SER:HA	1:B:1510:ARG:HH21	1.75	0.52
1:B:200:VAL:O	1:B:204:LEU:HG	2.09	0.52
1:B:1045:LEU:O	1:B:1067:PRO:CD	2.57	0.52
1:A:257:LEU:HD11	1:A:273:TYR:HB3	1.89	0.52
1:A:1196:LEU:HD22	1:A:1318:ASP:HA	1.91	0.52
1:B:249:THR:HG21	1:B:278:ARG:HB2	1.92	0.52
1:B:604:ALA:O	1:B:608:ILE:HG13	2.08	0.52
1:A:107:ARG:HG3	1:A:120:ARG:HB2	1.91	0.52
1:A:184:LEU:HD21	1:A:254:LEU:HD11	1.91	0.52
1:A:723:ARG:HB2	1:A:743:LYS:HB3	1.89	0.52
1:A:860:VAL:HB	1:A:908:TRP:CG	2.44	0.52
1:A:184:LEU:HD13	1:A:200:VAL:HG12	1.90	0.52
1:A:850:ILE:HG13	1:A:901:VAL:HG11	1.92	0.52
1:B:220:CYS:O	1:B:288:GLU:N	2.26	0.52
1:B:1042:ARG:NH1	1:B:1047:LEU:O	2.43	0.52
1:B:1394:ARG:HH11	1:B:1407:PHE:HE2	1.58	0.52
1:A:546:LEU:HD11	1:A:556:VAL:HB	1.91	0.52
1:A:1497:SER:HA	1:A:1510:ARG:HH21	1.74	0.52
1:B:784:ARG:HH11	1:B:799:LEU:HD11	1.75	0.52
1:B:811:VAL:HG21	1:B:1307:ILE:HG12	1.91	0.52
1:B:831:ALA:O	1:B:835:ARG:NE	2.43	0.52
1:B:184:LEU:HD13	1:B:200:VAL:HG12	1.92	0.52
1:B:1421:TRP:HE3	1:B:1478:ASP:OD1	1.91	0.52
1:A:846:TYR:O	1:A:850:ILE:HG12	2.10	0.52
1:B:217:TYR:O	1:B:234:ARG:HA	2.09	0.52
1:B:397:ARG:NH1	1:B:415:TYR:OH	2.42	0.52
1:B:491:ASP:OD1	1:B:491:ASP:N	2.43	0.52
1:A:140:ILE:HG22	1:A:141:THR:O	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:249:THR:HG21	1:A:278:ARG:HB2	1.92	0.52
1:A:675:LEU:HD22	1:A:876:ARG:HD2	1.91	0.52
1:A:162:GLU:HG2	1:A:240:LEU:HD21	1.92	0.51
1:A:1105:VAL:HG11	1:A:1110:ILE:HD11	1.91	0.51
1:A:1337:VAL:O	1:A:1341:ARG:HG3	2.10	0.51
1:B:42:LEU:HD23	1:B:63:TYR:CD2	2.45	0.51
1:A:785:TRP:HB3	1:A:890:GLY:HA3	1.91	0.51
1:A:1394:ARG:HH11	1:A:1407:PHE:HE2	1.58	0.51
1:A:1394:ARG:NH1	1:A:1406:ARG:HD2	2.24	0.51
1:A:1483:LEU:HD21	1:A:1542:ILE:HG12	1.86	0.51
1:B:846:TYR:O	1:B:850:ILE:HG12	2.10	0.51
1:B:1045:LEU:HG	1:B:1047:LEU:HD21	1.92	0.51
1:A:811:VAL:HG21	1:A:1307:ILE:HG12	1.92	0.51
1:A:970:MSE:HE2	1:A:978:LEU:HD22	1.93	0.51
1:A:1426:ASP:OD1	1:A:1455:TYR:OH	2.25	0.51
1:B:332:LEU:HA	1:B:335:ILE:HD12	1.91	0.51
1:B:875:ARG:HG3	1:B:875:ARG:O	2.08	0.51
1:A:491:ASP:N	1:A:491:ASP:OD1	2.43	0.51
1:A:1042:ARG:NH1	1:A:1047:LEU:O	2.44	0.51
1:B:514:ASP:N	1:B:536:GLY:O	2.44	0.51
1:A:338:THR:HG22	1:A:418:ARG:HE	1.75	0.51
1:A:561:PRO:HG2	1:B:560:ARG:NH1	2.26	0.51
1:A:875:ARG:O	1:A:875:ARG:HG3	2.11	0.51
1:A:1152:ASN:OD1	1:A:1303:LEU:HD22	2.11	0.51
1:A:1563:ILE:HG21	1:A:1577:ALA:HB2	1.93	0.51
1:B:379:HIS:HE2	1:B:435:GLU:HA	1.76	0.51
1:B:391:ARG:NH1	1:B:462:ASN:HB2	2.23	0.51
1:B:657:VAL:HG13	1:B:707:THR:HG23	1.92	0.51
1:B:675:LEU:HD22	1:B:876:ARG:HD2	1.91	0.51
1:A:259:GLN:HB2	1:A:377:LEU:HB2	1.92	0.51
1:A:723:ARG:HE	1:A:877:ASP:CG	2.19	0.51
1:B:107:ARG:HG3	1:B:120:ARG:HB2	1.93	0.51
1:B:671:LEU:HA	1:B:691:ALA:HB1	1.93	0.51
1:A:348:SER:HB2	1:A:350:LYS:HG2	1.92	0.50
1:A:516:VAL:HG12	1:A:535:LEU:HD23	1.93	0.50
1:B:970:MSE:HE2	1:B:978:LEU:HD22	1.93	0.50
1:A:110:ARG:NE	1:A:133:GLU:OE1	2.44	0.50
1:A:164:ARG:O	1:A:168:LEU:HG	2.11	0.50
1:B:46:HIS:HB3	1:B:74:GLN:HB3	1.93	0.50
1:B:90:LEU:HD11	1:B:155:LEU:HD12	1.92	0.50
1:B:622:VAL:HG23	1:B:632:VAL:HG21	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:LEU:HD23	1:A:63:TYR:CD2	2.47	0.50
1:A:784:ARG:NH2	1:A:795:GLU:OE2	2.44	0.50
1:B:954:THR:HG23	1:B:1069:ASP:H	1.76	0.50
1:B:169:ASP:HB3	1:B:235:LEU:HB3	1.94	0.50
1:A:1560:LEU:HD11	1:A:1581:ILE:HG12	1.92	0.50
1:B:629:TRP:CD1	1:B:629:TRP:H	2.29	0.50
1:B:711:LEU:N	1:B:711:LEU:CD1	2.74	0.50
1:B:723:ARG:HB2	1:B:743:LYS:HB3	1.94	0.50
1:B:1363:GLY:CA	1:B:1372:THR:HG21	2.41	0.50
1:A:331:LEU:O	1:A:335:ILE:HG13	2.12	0.50
1:A:784:ARG:NH1	1:A:799:LEU:HD11	2.26	0.50
1:A:1561:THR:O	1:A:1565:LYS:HG2	2.12	0.50
1:B:531:LEU:HB3	1:B:577:PHE:HB2	1.94	0.50
1:B:72:ALA:HB1	1:B:137:LEU:HD11	1.93	0.50
1:B:171:GLY:HA2	1:B:174:ILE:HD12	1.94	0.50
1:B:860:VAL:HB	1:B:908:TRP:CG	2.47	0.50
1:B:1389:TRP:HB2	1:B:1457:TYR:HE1	1.77	0.50
1:A:601:PHE:CE2	1:A:605:VAL:HG21	2.46	0.50
1:B:273:TYR:CE2	1:B:342:PRO:HB3	2.47	0.50
1:B:369:LEU:HA	1:B:453:GLN:NE2	2.27	0.50
1:B:785:TRP:HB3	1:B:890:GLY:HA3	1.93	0.50
1:A:1210:VAL:O	1:A:1214:MSE:HG3	2.11	0.50
1:B:442:VAL:HG12	1:B:444:THR:HG23	1.93	0.49
1:B:862:LYS:HD2	1:B:1159:SER:HA	1.94	0.49
1:A:252:ASP:OD1	1:A:253:ASP:N	2.45	0.49
1:B:162:GLU:HG2	1:B:240:LEU:HD21	1.94	0.49
1:B:164:ARG:O	1:B:168:LEU:HG	2.12	0.49
1:B:484:TYR:HB3	1:B:488:PHE:CZ	2.47	0.49
1:B:784:ARG:NH2	1:B:795:GLU:OE2	2.44	0.49
1:A:307:ILE:HG21	1:A:310:ILE:HG12	1.95	0.49
1:A:340:PRO:HG2	1:A:428:HIS:ND1	2.27	0.49
1:A:970:MSE:HE1	1:A:978:LEU:HB2	1.93	0.49
1:B:219:GLN:HE21	1:B:289:HIS:CD2	2.30	0.49
1:B:850:ILE:HG13	1:B:901:VAL:HG11	1.93	0.49
1:B:888:ASP:H	1:B:891:THR:HB	1.77	0.49
1:A:257:LEU:HD11	1:A:273:TYR:HD2	1.76	0.49
1:A:1381:ARG:NH2	1:A:1514:ARG:NH2	2.59	0.49
1:B:252:ASP:OD1	1:B:253:ASP:N	2.44	0.49
1:B:257:LEU:HD11	1:B:273:TYR:HB3	1.93	0.49
1:B:723:ARG:HE	1:B:877:ASP:CG	2.20	0.49
1:B:774:ARG:HD2	1:B:883:LEU:HD21	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:33:ALA:HB1	1:A:36:ASP:HB2	1.93	0.49
1:A:1042:ARG:CZ	1:A:1049:ALA:HA	2.42	0.49
1:B:307:ILE:HB	1:B:310:ILE:HB	1.94	0.49
1:A:976:ILE:O	1:A:1002:ARG:NH2	2.46	0.49
1:B:484:TYR:HA	1:B:487:ALA:HB3	1.95	0.49
1:B:601:PHE:CE2	1:B:605:VAL:HG21	2.46	0.49
1:B:1382:LEU:HD13	1:B:1453:GLY:O	2.13	0.49
1:A:1421:TRP:HE3	1:A:1478:ASP:OD1	1.95	0.49
1:B:309:LEU:HD23	1:B:310:ILE:HD13	1.94	0.49
1:B:523:THR:HG22	1:B:528:VAL:O	2.12	0.49
1:A:392:TYR:CE1	1:A:397:ARG:HB2	2.48	0.49
1:A:671:LEU:HA	1:A:691:ALA:HB1	1.95	0.49
1:A:839:ARG:O	1:A:843:VAL:HG23	2.13	0.49
1:A:960:ASP:OD2	1:A:985:ARG:NH2	2.29	0.49
1:A:1208:LEU:HD22	1:A:1245:ILE:O	2.13	0.49
1:A:72:ALA:HB1	1:A:137:LEU:HD11	1.94	0.49
1:A:189:GLU:HB3	1:A:191:HIS:CE1	2.48	0.49
1:A:219:GLN:HE21	1:A:289:HIS:CD2	2.31	0.49
1:A:274:ILE:HG23	1:A:292:VAL:HG22	1.94	0.49
1:A:309:LEU:HD23	1:A:310:ILE:HD13	1.95	0.49
1:A:415:TYR:OH	1:B:389:ARG:CZ	2.61	0.49
1:A:1096:ASP:HA	1:A:1099:ARG:NH1	2.28	0.49
1:B:839:ARG:O	1:B:843:VAL:HG23	2.12	0.49
1:B:1042:ARG:CZ	1:B:1049:ALA:HA	2.43	0.49
1:A:330:GLN:OE1	1:B:301:ASN:HB2	2.13	0.49
1:A:629:TRP:H	1:A:629:TRP:CD1	2.30	0.49
1:B:1545:TRP:HA	1:B:1548:THR:HG22	1.95	0.49
1:A:162:GLU:HG2	1:A:240:LEU:HD11	1.94	0.48
1:A:557:LEU:HB2	1:A:578:LYS:O	2.13	0.48
1:B:108:VAL:HG21	1:B:133:GLU:CD	2.37	0.48
1:B:943:GLU:OE1	1:B:1201:ARG:NH1	2.46	0.48
1:B:1096:ASP:HA	1:B:1099:ARG:NH1	2.28	0.48
1:B:274:ILE:HG23	1:B:292:VAL:HG22	1.94	0.48
1:B:621:LEU:HD22	1:B:665:THR:HG21	1.94	0.48
1:B:970:MSE:HE1	1:B:978:LEU:HB2	1.95	0.48
1:A:557:LEU:O	1:B:541:SER:HA	2.14	0.48
1:A:912:ALA:HB2	1:A:1154:LYS:CB	2.44	0.48
1:A:961:MSE:HE3	1:A:1006:PHE:HB2	1.94	0.48
1:B:327:HIS:H	1:B:327:HIS:HD1	1.60	0.48
1:B:657:VAL:HG11	1:B:711:LEU:CD1	2.43	0.48
1:B:976:ILE:O	1:B:1002:ARG:NH2	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1152:ASN:OD1	1:B:1303:LEU:HD22	2.13	0.48
1:A:261:THR:HA	1:A:377:LEU:HD11	1.94	0.48
1:A:747:LEU:HD23	1:A:756:ARG:HB2	1.95	0.48
1:A:200:VAL:O	1:A:204:LEU:HG	2.13	0.48
1:A:862:LYS:HD2	1:A:1159:SER:HA	1.94	0.48
1:A:1105:VAL:HG12	1:A:1107:ALA:H	1.78	0.48
1:A:1363:GLY:CA	1:A:1372:THR:HG21	2.43	0.48
1:B:194:ASN:O	1:B:197:ARG:HG3	2.14	0.48
1:B:257:LEU:HD11	1:B:273:TYR:HD2	1.77	0.48
1:B:309:LEU:HD21	1:B:313:ARG:CZ	2.44	0.48
1:A:309:LEU:HD21	1:A:313:ARG:CZ	2.43	0.48
1:A:992:ASN:O	1:A:1022:SER:OG	2.31	0.48
1:A:46:HIS:HB3	1:A:74:GLN:HB3	1.95	0.48
1:A:392:TYR:HE1	1:A:397:ARG:HB2	1.77	0.48
1:A:484:TYR:HB3	1:A:488:PHE:CZ	2.48	0.48
1:A:1382:LEU:HD13	1:A:1453:GLY:O	2.14	0.48
1:B:1560:LEU:HD11	1:B:1581:ILE:HG12	1.95	0.48
1:A:954:THR:HG23	1:A:1069:ASP:H	1.78	0.48
1:A:1045:LEU:HG	1:A:1047:LEU:HD21	1.96	0.48
1:B:533:TRP:CH2	1:B:545:LEU:HG	2.48	0.48
1:B:1208:LEU:HD22	1:B:1245:ILE:O	2.13	0.48
1:B:912:ALA:HB2	1:B:1154:LYS:CB	2.44	0.48
1:B:1205:ALA:HA	1:B:1246:GLY:N	2.28	0.48
1:A:1092:ASP:HB3	1:A:1099:ARG:NH2	2.29	0.48
1:A:704:SER:OG	1:A:706:ASP:OD1	2.29	0.47
1:A:785:TRP:CD1	1:A:785:TRP:C	2.92	0.47
1:B:747:LEU:HD23	1:B:756:ARG:HB2	1.95	0.47
1:B:152:ALA:O	1:B:156:VAL:HG23	2.14	0.47
1:B:516:VAL:HG12	1:B:535:LEU:HD23	1.96	0.47
1:A:368:THR:HA	1:A:386:TYR:O	2.13	0.47
1:B:1081:LYS:NZ	1:B:1082:ALA:O	2.31	0.47
1:A:73:LEU:O	1:A:137:LEU:HA	2.15	0.47
1:A:1480:TYR:OH	1:A:1521:LEU:HD23	2.14	0.47
1:B:784:ARG:NH1	1:B:799:LEU:HD11	2.29	0.47
1:B:1563:ILE:HG21	1:B:1577:ALA:HB2	1.96	0.47
1:A:1545:TRP:HA	1:A:1548:THR:HG22	1.96	0.47
1:A:49:LEU:HD13	1:A:61:ALA:HB2	1.97	0.47
1:B:33:ALA:HB1	1:B:36:ASP:HB2	1.96	0.47
1:B:374:ALA:N	1:B:444:THR:HG21	2.29	0.47
1:B:961:MSE:HE3	1:B:1006:PHE:HB2	1.97	0.47
1:B:1137:ALA:O	1:B:1141:SER:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1354:ASP:O	1:B:1357:ARG:HG2	2.14	0.47
1:A:158:GLY:O	1:A:162:GLU:HG3	2.15	0.47
1:A:262:MSE:O	1:A:272:PRO:HD2	2.14	0.47
1:A:273:TYR:CE2	1:A:342:PRO:HB3	2.48	0.47
1:A:531:LEU:HB3	1:A:577:PHE:HB2	1.96	0.47
1:B:783:LEU:O	1:B:891:THR:OG1	2.20	0.47
1:B:1078:THR:HG21	1:B:1119:THR:HG23	1.96	0.47
1:A:352:LEU:C	1:A:352:LEU:HD23	2.40	0.47
1:A:417:ALA:H	1:B:421:GLU:HG2	1.79	0.47
1:A:711:LEU:N	1:A:711:LEU:CD1	2.77	0.47
1:B:369:LEU:HA	1:B:453:GLN:HE21	1.79	0.47
1:B:991:PRO:HB2	1:B:1040:GLN:HB3	1.97	0.47
1:B:1561:THR:O	1:B:1565:LYS:HG2	2.14	0.47
1:A:100:ALA:HB3	1:A:139:PRO:HD2	1.97	0.47
1:A:353:LEU:HA	1:A:356:ALA:HB3	1.96	0.47
1:B:49:LEU:HD13	1:B:61:ALA:HB2	1.96	0.47
1:B:924:LYS:HA	1:B:964:ASP:CG	2.40	0.47
1:A:348:SER:O	1:A:351:GLN:N	2.47	0.47
1:A:1402:ALA:HA	1:A:1405:ASN:ND2	2.30	0.47
1:B:332:LEU:HD21	1:B:360:VAL:CG2	2.43	0.47
1:B:1092:ASP:HB3	1:B:1099:ARG:NH2	2.30	0.47
1:A:1204:ALA:O	1:A:1246:GLY:HA3	2.15	0.46
1:A:1471:ARG:NH1	1:A:1534:PRO:HG3	2.30	0.46
1:B:108:VAL:N	1:B:131:ALA:O	2.33	0.46
1:B:527:ARG:HH12	1:B:587:HIS:HA	1.80	0.46
1:B:647:PHE:HE2	1:B:710:VAL:HG22	1.80	0.46
1:B:960:ASP:OD2	1:B:985:ARG:NH2	2.29	0.46
1:A:177:LEU:HD12	1:A:177:LEU:HA	1.77	0.46
1:A:352:LEU:O	1:A:355:MSE:N	2.48	0.46
1:A:471:ALA:HB2	1:A:502:ILE:HD12	1.97	0.46
1:A:647:PHE:HE2	1:A:710:VAL:HG22	1.81	0.46
1:A:1078:THR:HG21	1:A:1119:THR:HG23	1.97	0.46
1:A:1081:LYS:NZ	1:A:1082:ALA:O	2.32	0.46
1:A:1205:ALA:HA	1:A:1246:GLY:N	2.29	0.46
1:B:983:ASP:OD2	1:B:985:ARG:NH2	2.49	0.46
1:A:1137:ALA:O	1:A:1141:SER:HB2	2.15	0.46
1:B:162:GLU:HG2	1:B:240:LEU:HD11	1.96	0.46
1:B:360:VAL:O	1:B:360:VAL:HG12	2.15	0.46
1:B:557:LEU:HB2	1:B:578:LYS:O	2.15	0.46
1:A:9:PHE:CG	1:A:104:PRO:HG3	2.50	0.46
1:B:392:TYR:HE1	1:B:397:ARG:HB2	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:508:ILE:CG2	1:B:566:ARG:HG2	2.46	0.46
1:B:1181:GLU:CD	1:B:1288:THR:H	2.21	0.46
1:B:1381:ARG:NH2	1:B:1514:ARG:NH2	2.61	0.46
1:A:774:ARG:HD2	1:A:883:LEU:HD21	1.97	0.46
1:A:1264:LYS:HG3	1:A:1313:VAL:HG21	1.97	0.46
1:B:73:LEU:O	1:B:137:LEU:HA	2.16	0.46
1:B:336:ILE:O	1:B:339:ILE:N	2.42	0.46
1:A:35:ASP:OD1	1:A:35:ASP:N	2.42	0.46
1:A:104:PRO:HB2	1:A:106:PHE:CE1	2.51	0.46
1:A:664:THR:HG23	1:A:698:ASP:CB	2.46	0.46
1:A:722:LEU:N	1:A:743:LYS:O	2.40	0.46
1:A:1181:GLU:CD	1:A:1288:THR:H	2.20	0.46
1:B:159:ILE:HG21	1:B:265:TYR:HB2	1.98	0.46
1:B:331:LEU:O	1:B:335:ILE:HG13	2.15	0.46
1:A:1393:TYR:O	1:A:1394:ARG:HD2	2.15	0.46
1:B:35:ASP:OD1	1:B:35:ASP:N	2.41	0.46
1:B:104:PRO:HB2	1:B:106:PHE:CE1	2.51	0.46
1:B:1028:TYR:CD1	1:B:1035:ILE:HG23	2.50	0.46
1:B:1277:VAL:HG11	1:B:1400:VAL:HB	1.98	0.46
1:A:622:VAL:HG23	1:A:632:VAL:HG21	1.97	0.46
1:B:622:VAL:HG13	1:B:627:LEU:O	2.16	0.46
1:A:203:LEU:HD13	1:A:307:ILE:HG23	1.97	0.46
1:A:749:ILE:O	1:A:756:ARG:NH1	2.49	0.46
1:B:335:ILE:HG23	1:B:359:VAL:CG1	2.34	0.46
1:B:704:SER:OG	1:B:706:ASP:OD1	2.30	0.46
1:B:1018:LYS:O	1:B:1021:ILE:HG22	2.17	0.46
1:A:307:ILE:HB	1:A:310:ILE:HB	1.98	0.45
1:A:1018:LYS:O	1:A:1021:ILE:HG22	2.16	0.45
1:B:545:LEU:HD11	1:B:609:TRP:CZ3	2.51	0.45
1:B:779:ALA:CB	1:B:815:ALA:HB2	2.46	0.45
1:B:792:PHE:O	1:B:796:ILE:HG12	2.16	0.45
1:A:657:VAL:HG13	1:A:707:THR:HG23	1.97	0.45
1:A:983:ASP:OD2	1:A:985:ARG:NH2	2.49	0.45
1:A:1213:ARG:HB3	1:A:1326:TYR:OH	2.15	0.45
1:A:1354:ASP:O	1:A:1357:ARG:HG2	2.16	0.45
1:B:552:MSE:HE2	1:B:601:PHE:CD1	2.51	0.45
1:B:749:ILE:O	1:B:756:ARG:NH1	2.49	0.45
1:B:806:LYS:HD3	1:B:1144:VAL:HG21	1.97	0.45
1:A:84:VAL:HG11	1:A:103:ASN:ND2	2.27	0.45
1:A:523:THR:HG22	1:A:528:VAL:O	2.16	0.45
1:A:647:PHE:CD1	1:A:648:PRO:HD2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:230:ASP:HA	1:B:231:PRO:HD3	1.81	0.45
1:B:1464:ASP:O	1:B:1468:ILE:HG12	2.17	0.45
1:B:1544:GLU:O	1:B:1548:THR:HG22	2.17	0.45
1:A:350:LYS:HG3	1:A:351:GLN:H	1.82	0.45
1:B:9:PHE:CG	1:B:104:PRO:HG3	2.52	0.45
1:A:640:LYS:HB3	1:A:769:GLU:OE2	2.17	0.45
1:A:902:ALA:HB2	1:A:913:PHE:CD2	2.51	0.45
1:A:1380:ARG:O	1:A:1383:VAL:HG22	2.17	0.45
1:A:1464:ASP:O	1:A:1468:ILE:HG12	2.16	0.45
1:B:964:ASP:OD1	1:B:968:ASN:ND2	2.49	0.45
1:A:9:PHE:CD2	1:A:104:PRO:HG3	2.51	0.45
1:A:943:GLU:OE1	1:A:1201:ARG:NH1	2.50	0.45
1:B:1573:THR:O	1:B:1576:VAL:HG12	2.17	0.45
1:A:194:ASN:O	1:A:197:ARG:HG3	2.17	0.45
1:B:16:PRO:HB3	1:B:98:TYR:CZ	2.52	0.45
1:B:262:MSE:O	1:B:272:PRO:HD2	2.16	0.45
1:B:350:LYS:HG3	1:B:351:GLN:H	1.81	0.45
1:B:392:TYR:CE1	1:B:397:ARG:HB2	2.51	0.45
1:B:411:ALA:HB2	1:B:434:PRO:HG3	1.99	0.45
1:B:1200:SER:CB	1:B:1322:ILE:HD11	2.47	0.45
1:B:1480:TYR:OH	1:B:1521:LEU:HD23	2.17	0.45
1:A:442:VAL:HG12	1:A:444:THR:HG23	1.99	0.45
1:A:912:ALA:HB2	1:A:1154:LYS:HB3	1.99	0.45
1:A:1028:TYR:CD1	1:A:1035:ILE:HG23	2.52	0.45
1:A:1240:ARG:NH1	1:A:1248:THR:HG23	2.32	0.45
1:B:154:ARG:O	1:B:157:PRO:HD2	2.17	0.45
1:B:1021:ILE:HG12	1:B:1026:GLY:N	2.31	0.45
1:B:1445:ASP:OD1	1:B:1446:LEU:N	2.50	0.45
1:A:49:LEU:HD11	1:A:59:LYS:HB3	1.99	0.45
1:A:1480:TYR:CZ	1:A:1521:LEU:HD23	2.52	0.45
1:B:307:ILE:CG2	1:B:310:ILE:HG12	2.47	0.45
1:B:356:ALA:O	1:B:360:VAL:HG23	2.17	0.45
1:B:403:ILE:HG21	1:B:455:LEU:HB3	1.99	0.45
1:A:108:VAL:HG21	1:A:133:GLU:CD	2.42	0.45
1:A:261:THR:HA	1:A:377:LEU:CD1	2.47	0.45
1:A:281:PRO:HG2	1:A:285:ARG:HD3	1.98	0.45
1:A:508:ILE:CG2	1:A:566:ARG:HG2	2.46	0.45
1:A:1065:LYS:O	1:A:1106:ARG:NH2	2.49	0.45
1:B:348:SER:O	1:B:351:GLN:N	2.50	0.45
1:B:390:ASP:N	1:B:390:ASP:OD1	2.49	0.45
1:B:1204:ALA:O	1:B:1246:GLY:HA3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1390:LEU:HD23	1:B:1390:LEU:HA	1.77	0.45
1:B:1471:ARG:NH1	1:B:1534:PRO:HG3	2.32	0.45
1:A:390:ASP:OD1	1:A:390:ASP:N	2.49	0.44
1:B:49:LEU:HD11	1:B:59:LYS:HB3	1.98	0.44
1:B:86:SER:OG	1:B:266:LEU:HA	2.17	0.44
1:B:173:MSE:HB3	1:B:214:LEU:HD13	1.98	0.44
1:B:911:ASP:OD1	1:B:911:ASP:N	2.48	0.44
1:A:152:ALA:O	1:A:156:VAL:HG23	2.17	0.44
1:A:518:LEU:HD11	1:A:533:TRP:CE2	2.53	0.44
1:A:555:VAL:N	1:A:580:SER:O	2.49	0.44
1:A:644:GLN:HB3	1:A:793:ARG:HB2	1.99	0.44
1:B:1421:TRP:HD1	1:B:1481:PHE:HD2	1.62	0.44
1:B:1579:ARG:O	1:B:1579:ARG:HG2	2.16	0.44
1:A:492:TYR:O	1:A:496:PHE:HB2	2.18	0.44
1:A:1218:LEU:HD23	1:A:1218:LEU:HA	1.77	0.44
1:B:166:ILE:HD13	1:B:215:LEU:HA	1.98	0.44
1:B:177:LEU:HD12	1:B:177:LEU:HA	1.76	0.44
1:A:61:ALA:O	1:A:73:LEU:HD12	2.17	0.44
1:A:334:ASP:O	1:A:418:ARG:NE	2.50	0.44
1:A:806:LYS:HD3	1:A:1144:VAL:HG21	2.00	0.44
1:B:912:ALA:HB2	1:B:1154:LYS:HB3	2.00	0.44
1:B:1081:LYS:HB3	1:B:1081:LYS:HE3	1.67	0.44
1:A:159:ILE:HG21	1:A:265:TYR:HB2	1.98	0.44
1:A:317:ALA:CB	1:A:352:LEU:HD22	2.46	0.44
1:A:330:GLN:OE1	1:B:297:VAL:O	2.35	0.44
1:A:779:ALA:HA	1:A:813:VAL:O	2.17	0.44
1:A:1156:LEU:HD12	1:A:1301:HIS:HD2	1.82	0.44
1:B:293:GLY:O	1:B:294:LEU:HG	2.18	0.44
1:B:471:ALA:HB2	1:B:502:ILE:HD12	1.99	0.44
1:B:686:ARG:HG3	1:B:688:ALA:HB2	2.00	0.44
1:B:1480:TYR:CZ	1:B:1521:LEU:HD23	2.53	0.44
1:A:911:ASP:OD1	1:A:911:ASP:N	2.50	0.44
1:A:1256:MSE:HE2	1:A:1256:MSE:HB3	1.87	0.44
1:B:158:GLY:O	1:B:162:GLU:HG3	2.18	0.44
1:B:189:GLU:HB3	1:B:191:HIS:CE1	2.52	0.44
1:B:924:LYS:HA	1:B:964:ASP:OD1	2.18	0.44
1:A:332:LEU:O	1:A:335:ILE:HB	2.18	0.44
1:A:527:ARG:HH12	1:A:587:HIS:HA	1.82	0.44
1:A:1544:GLU:O	1:A:1548:THR:HG22	2.17	0.44
1:A:86:SER:OG	1:A:266:LEU:HA	2.18	0.44
1:A:262:MSE:HE2	1:A:262:MSE:HB3	1.62	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:450:SER:O	1:A:453:GLN:HB3	2.18	0.44
1:B:100:ALA:HB3	1:B:139:PRO:HD2	1.99	0.44
1:B:1213:ARG:HB3	1:B:1326:TYR:OH	2.18	0.44
1:B:262:MSE:HE2	1:B:262:MSE:HB3	1.65	0.44
1:B:989:LEU:HD12	1:B:1028:TYR:CE2	2.53	0.44
1:A:566:ARG:HD3	1:A:570:LEU:HB3	1.99	0.43
1:B:722:LEU:HD21	1:B:745:ASN:HB2	2.00	0.43
1:B:1087:ASP:HB3	1:B:1096:ASP:OD1	2.18	0.43
1:B:1471:ARG:HD3	1:B:1534:PRO:HG3	2.00	0.43
1:A:921:TYR:HE2	1:A:1182:VAL:HG11	1.83	0.43
1:A:991:PRO:HB2	1:A:1040:GLN:HB3	1.99	0.43
1:A:331:LEU:HD23	1:A:332:LEU:HD12	2.00	0.43
1:A:454:ASP:O	1:A:457:THR:N	2.51	0.43
1:A:779:ALA:CB	1:A:815:ALA:HB2	2.47	0.43
1:A:1021:ILE:HG12	1:A:1026:GLY:N	2.32	0.43
1:A:1087:ASP:HB3	1:A:1096:ASP:OD1	2.18	0.43
1:B:423:PRO:HG2	1:B:424:TRP:CD1	2.53	0.43
1:B:781:GLY:HA2	1:B:803:GLN:NE2	2.33	0.43
1:A:1394:ARG:NH1	1:A:1407:PHE:HE2	2.16	0.43
1:B:186:THR:O	1:B:188:LEU:N	2.52	0.43
1:B:825:PRO:HD3	1:B:841:GLU:HG2	2.00	0.43
1:A:309:LEU:O	1:A:312:ARG:HB3	2.17	0.43
1:A:394:THR:O	1:A:397:ARG:HB3	2.18	0.43
1:A:484:TYR:HD2	1:A:488:PHE:CE1	2.37	0.43
1:A:924:LYS:HA	1:A:964:ASP:CG	2.44	0.43
1:A:1053:GLU:O	1:A:1054:LEU:HD12	2.17	0.43
1:A:1081:LYS:HB3	1:A:1081:LYS:HE3	1.69	0.43
1:B:9:PHE:CD2	1:B:104:PRO:HG3	2.53	0.43
1:B:332:LEU:O	1:B:335:ILE:HB	2.17	0.43
1:B:640:LYS:HB3	1:B:769:GLU:OE2	2.19	0.43
1:B:908:TRP:H	1:B:908:TRP:CD1	2.37	0.43
1:A:862:LYS:HD3	1:A:1162:THR:CB	2.43	0.43
1:A:1471:ARG:HD3	1:A:1534:PRO:HG3	2.00	0.43
1:B:1459:LEU:HA	1:B:1462:VAL:HB	2.00	0.43
1:A:619:ASN:HA	1:A:632:VAL:HG11	2.01	0.43
1:B:61:ALA:O	1:B:73:LEU:HD12	2.18	0.43
1:B:255:LEU:CD1	1:B:277:VAL:HG22	2.48	0.43
1:B:281:PRO:HG2	1:B:285:ARG:HD3	2.00	0.43
1:B:806:LYS:CD	1:B:1144:VAL:HG21	2.47	0.43
1:B:921:TYR:HE2	1:B:1182:VAL:HG11	1.84	0.43
1:B:1030:ARG:HE	1:B:1030:ARG:HB3	1.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:686:ARG:HG3	1:A:688:ALA:HB2	2.00	0.43
1:A:929:THR:HA	1:A:1142:ALA:HB3	2.01	0.43
1:A:994:ASP:OD2	1:A:997:ARG:HD3	2.18	0.43
1:B:518:LEU:HD11	1:B:533:TRP:CE2	2.54	0.43
1:B:746:PRO:HA	1:B:749:ILE:HD12	1.99	0.43
1:B:787:ASP:OD1	1:B:787:ASP:N	2.52	0.43
1:B:994:ASP:OD2	1:B:997:ARG:HD3	2.19	0.43
1:B:1393:TYR:O	1:B:1394:ARG:HD2	2.19	0.43
1:A:446:LEU:HA	1:A:449:GLU:HB2	2.01	0.43
1:A:630:GLN:H	1:A:630:GLN:HG3	1.62	0.43
1:B:309:LEU:O	1:B:312:ARG:HB3	2.18	0.43
1:B:370:LEU:HD11	1:B:372:LEU:HD21	2.01	0.43
1:B:647:PHE:CD1	1:B:648:PRO:HD2	2.53	0.43
1:B:778:VAL:HA	1:B:882:TYR:CD2	2.53	0.43
1:A:806:LYS:CD	1:A:1144:VAL:HG21	2.49	0.43
1:A:1423:ARG:CZ	1:A:1482:ALA:HB2	2.49	0.43
1:A:1445:ASP:OD1	1:A:1446:LEU:N	2.51	0.43
1:B:440:ASP:C	1:B:442:VAL:H	2.26	0.43
1:B:1423:ARG:CZ	1:B:1482:ALA:HB2	2.49	0.43
1:A:380:PHE:HA	1:A:431:VAL:O	2.20	0.42
1:A:467:MSE:HE2	1:A:467:MSE:HB2	1.82	0.42
1:A:491:ASP:O	1:A:494:GLN:HG3	2.19	0.42
1:A:1092:ASP:HB3	1:A:1099:ARG:HH22	1.84	0.42
1:A:1359:ILE:HD11	1:A:1450:ILE:HD11	2.01	0.42
1:A:1390:LEU:HA	1:A:1390:LEU:HD23	1.75	0.42
1:A:1560:LEU:HD12	1:A:1584:MSE:HE1	2.01	0.42
1:B:664:THR:HG23	1:B:698:ASP:CB	2.48	0.42
1:B:785:TRP:CD1	1:B:785:TRP:C	2.95	0.42
1:B:902:ALA:HB2	1:B:913:PHE:CD2	2.54	0.42
1:B:1394:ARG:NH1	1:B:1407:PHE:HE2	2.17	0.42
1:A:307:ILE:CG2	1:A:310:ILE:HG12	2.49	0.42
1:A:546:LEU:HD23	1:A:550:GLN:HB2	2.01	0.42
1:A:1277:VAL:HG11	1:A:1400:VAL:HB	2.01	0.42
1:A:104:PRO:HB2	1:A:106:PHE:CZ	2.54	0.42
1:A:154:ARG:O	1:A:157:PRO:HD2	2.18	0.42
1:A:727:PHE:O	1:A:872:GLU:HB3	2.19	0.42
1:A:1030:ARG:HE	1:A:1030:ARG:HB3	1.61	0.42
1:B:454:ASP:C	1:B:456:LEU:N	2.77	0.42
1:B:535:LEU:HD12	1:B:575:TYR:HE1	1.84	0.42
1:B:891:THR:HG22	1:B:891:THR:O	2.18	0.42
1:B:1053:GLU:O	1:B:1054:LEU:HD12	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:326:SER:HB3	1:B:14:ARG:NH1	2.34	0.42
1:A:369:LEU:HA	1:A:453:GLN:HE21	1.85	0.42
1:A:397:ARG:HG2	1:A:401:GLN:OE1	2.19	0.42
1:B:331:LEU:HD23	1:B:332:LEU:HD12	2.01	0.42
1:B:394:THR:O	1:B:397:ARG:HB3	2.20	0.42
1:B:1045:LEU:CD2	1:B:1047:LEU:HD11	2.38	0.42
1:B:1193:GLN:HE22	1:B:1260:LYS:HZ3	1.60	0.42
1:A:1400:VAL:HG12	1:A:1404:ILE:HD12	2.01	0.42
1:B:82:MSE:H	1:B:82:MSE:HE2	1.83	0.42
1:B:320:MSE:H	1:B:320:MSE:HG2	1.68	0.42
1:B:849:PHE:O	1:B:853:LEU:HG	2.20	0.42
1:A:101:ILE:C	1:A:102:MSE:HG3	2.45	0.42
1:A:369:LEU:HA	1:A:453:GLN:NE2	2.35	0.42
1:A:1459:LEU:HA	1:A:1462:VAL:HB	2.01	0.42
1:B:418:ARG:HB3	1:B:426:VAL:O	2.20	0.42
1:B:582:HIS:ND1	1:B:584:SER:OG	2.39	0.42
1:B:821:VAL:HG12	1:B:845:CYS:SG	2.59	0.42
1:B:862:LYS:HD3	1:B:1162:THR:CB	2.47	0.42
1:A:518:LEU:HD23	1:A:531:LEU:HD21	2.02	0.42
1:A:1200:SER:CB	1:A:1322:ILE:HD11	2.49	0.42
1:A:1421:TRP:HD1	1:A:1481:PHE:HD2	1.64	0.42
1:B:466:ARG:HG3	1:B:498:PRO:HB2	2.01	0.42
1:B:492:TYR:O	1:B:496:PHE:HB2	2.18	0.42
1:B:1308:ILE:HD13	1:B:1308:ILE:HA	1.87	0.42
1:A:53:ARG:NH2	1:A:77:THR:HA	2.34	0.42
1:A:393:THR:OG1	1:A:395:ALA:HB3	2.19	0.42
1:A:535:LEU:HD12	1:A:575:TYR:HE1	1.85	0.42
1:A:722:LEU:HD21	1:A:745:ASN:HB2	2.01	0.42
1:A:1487:LEU:HA	1:A:1487:LEU:HD23	1.77	0.42
1:B:104:PRO:HB2	1:B:106:PHE:CZ	2.55	0.42
1:B:548:MSE:O	1:B:551:SER:OG	2.33	0.42
1:B:744:LEU:O	1:B:746:PRO:HD3	2.20	0.42
1:B:1238:ARG:HA	1:B:1241:ALA:CB	2.49	0.42
1:A:98:TYR:HA	1:A:140:ILE:HD13	2.02	0.42
1:A:100:ALA:O	1:A:138:VAL:HG13	2.20	0.42
1:A:392:TYR:OH	1:A:397:ARG:HD3	2.19	0.42
1:A:744:LEU:O	1:A:746:PRO:HD3	2.20	0.42
1:A:778:VAL:HA	1:A:882:TYR:CD2	2.55	0.42
1:B:1024:GLY:HA3	1:B:1040:GLN:OE1	2.19	0.42
1:B:1157:ILE:HD12	1:B:1175:LEU:CD1	2.50	0.42
1:B:1400:VAL:HG12	1:B:1404:ILE:HD12	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:108:VAL:N	1:A:131:ALA:O	2.36	0.42
1:A:166:ILE:HD13	1:A:215:LEU:HA	2.02	0.42
1:A:171:GLY:HA2	1:A:174:ILE:HD12	2.02	0.42
1:A:230:ASP:HA	1:A:231:PRO:HD3	1.83	0.42
1:A:330:GLN:HB2	1:B:301:ASN:HB2	2.02	0.42
1:A:592:GLU:HA	1:A:595:ARG:NH1	2.34	0.42
1:A:939:ARG:HA	1:A:939:ARG:HD2	1.96	0.42
1:A:1560:LEU:HD11	1:A:1581:ILE:CG1	2.50	0.42
1:B:354:GLU:H	1:B:354:GLU:HG3	1.49	0.42
1:B:448:ASN:OD1	1:B:451:ARG:NH2	2.47	0.42
1:B:1060:ILE:HG21	1:B:1098:ILE:HD12	2.02	0.42
1:A:552:MSE:O	1:A:623:MSE:HG3	2.20	0.41
1:B:53:ARG:NH2	1:B:77:THR:HA	2.35	0.41
1:A:248:LEU:HD12	1:A:276:VAL:HG21	2.02	0.41
1:A:533:TRP:CH2	1:A:545:LEU:HG	2.54	0.41
1:A:1024:GLY:HA3	1:A:1040:GLN:OE1	2.20	0.41
1:A:1178:MSE:HE3	1:A:1178:MSE:HB2	1.98	0.41
1:A:1544:GLU:HA	1:A:1547:THR:HB	2.03	0.41
1:B:264:SER:HB3	1:B:272:PRO:HG3	2.02	0.41
1:B:397:ARG:HG2	1:B:401:GLN:OE1	2.20	0.41
1:B:536:GLY:HA2	1:B:572:VAL:HG12	2.02	0.41
1:A:325:PRO:HG2	1:B:14:ARG:HH22	1.85	0.41
1:A:411:ALA:HB2	1:A:434:PRO:HG3	2.02	0.41
1:A:1045:LEU:HD23	1:A:1047:LEU:HD11	2.03	0.41
1:B:203:LEU:HD13	1:B:307:ILE:HG23	2.00	0.41
1:B:1235:LYS:HA	1:B:1238:ARG:NH1	2.35	0.41
1:B:1264:LYS:HG3	1:B:1313:VAL:HG21	2.01	0.41
1:A:186:THR:O	1:A:188:LEU:N	2.54	0.41
1:A:471:ALA:CB	1:A:481:LEU:HD21	2.51	0.41
1:A:545:LEU:HD12	1:A:548:MSE:SE	2.71	0.41
1:A:545:LEU:HD11	1:A:609:TRP:CZ3	2.54	0.41
1:A:908:TRP:CD1	1:A:908:TRP:H	2.38	0.41
1:A:1557:ARG:CZ	1:A:1557:ARG:HB3	2.51	0.41
1:B:467:MSE:HE2	1:B:467:MSE:HB2	1.89	0.41
1:B:1263:LEU:HD23	1:B:1263:LEU:HA	1.91	0.41
1:A:781:GLY:HA2	1:A:803:GLN:NE2	2.35	0.41
1:A:964:ASP:OD1	1:A:968:ASN:ND2	2.53	0.41
1:A:1492:LEU:HD23	1:A:1574:LEU:HD22	2.03	0.41
1:B:765:SER:HB3	1:B:768:VAL:HG12	2.01	0.41
1:B:929:THR:HA	1:B:1142:ALA:HB3	2.02	0.41
1:B:1301:HIS:O	1:B:1304:ARG:HG2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:285:ARG:HE	1:A:287:ILE:HD11	1.85	0.41
1:A:313:ARG:HA	1:A:316:GLU:OE2	2.21	0.41
1:A:843:VAL:HG22	1:A:894:PHE:CE1	2.55	0.41
1:A:1379:LEU:HD12	1:A:1379:LEU:HA	1.94	0.41
1:B:619:ASN:HA	1:B:632:VAL:HG11	2.01	0.41
1:A:332:LEU:HA	1:A:335:ILE:CG1	2.51	0.41
1:A:1573:THR:O	1:A:1576:VAL:HG12	2.21	0.41
1:B:465:ASP:OD1	1:B:466:ARG:N	2.54	0.41
1:B:613:VAL:HG12	1:B:633:VAL:CG2	2.51	0.41
1:B:1492:LEU:HD23	1:B:1574:LEU:HD22	2.02	0.41
1:A:46:HIS:HB3	1:A:74:GLN:CB	2.50	0.41
1:A:404:LEU:O	1:A:408:LEU:HB2	2.21	0.41
1:A:1391:LEU:O	1:A:1396:GLN:NE2	2.54	0.41
1:A:1510:ARG:O	1:A:1513:ILE:HG22	2.21	0.41
1:B:58:THR:HG21	1:B:160:LEU:HB2	2.02	0.41
1:B:101:ILE:C	1:B:102:MSE:HG3	2.46	0.41
1:B:1359:ILE:HD11	1:B:1450:ILE:HD11	2.01	0.41
1:A:82:MSE:HE2	1:A:82:MSE:H	1.85	0.41
1:A:88:THR:O	1:A:91:LEU:HB2	2.20	0.41
1:A:257:LEU:HD11	1:A:273:TYR:CD2	2.55	0.41
1:A:264:SER:C	1:A:266:LEU:N	2.79	0.41
1:A:320:MSE:HG3	1:A:353:LEU:HD11	2.02	0.41
1:A:644:GLN:OE1	1:A:791:ASP:HA	2.21	0.41
1:A:954:THR:HG23	1:A:1068:VAL:HG13	2.02	0.41
1:A:1301:HIS:O	1:A:1304:ARG:HG2	2.20	0.41
1:A:1385:ARG:NE	1:A:1514:ARG:CZ	2.84	0.41
1:B:46:HIS:HB3	1:B:74:GLN:CB	2.50	0.41
1:B:218:GLN:OE1	1:B:238:LEU:HD22	2.21	0.41
1:B:1178:MSE:HG2	1:B:1289:ARG:HH21	1.86	0.41
1:B:1487:LEU:HD23	1:B:1487:LEU:HA	1.76	0.41
1:A:173:MSE:HB3	1:A:214:LEU:HD13	2.03	0.41
1:A:416:SER:HA	1:B:421:GLU:HG2	2.02	0.41
1:A:825:PRO:HD3	1:A:841:GLU:HG2	2.02	0.41
1:B:2:ILE:H	1:B:2:ILE:HG13	1.63	0.41
1:B:332:LEU:HA	1:B:335:ILE:CG1	2.51	0.41
1:B:555:VAL:N	1:B:580:SER:O	2.53	0.41
1:B:1197:MSE:SE	1:B:1253:ALA:HB2	2.71	0.41
1:B:1402:ALA:HA	1:B:1405:ASN:ND2	2.35	0.41
1:A:418:ARG:HB3	1:A:426:VAL:O	2.21	0.40
1:A:849:PHE:O	1:A:853:LEU:HG	2.21	0.40
1:A:1235:LYS:O	1:A:1238:ARG:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:380:PHE:HA	1:B:431:VAL:O	2.21	0.40
1:B:484:TYR:HD2	1:B:488:PHE:CE1	2.39	0.40
1:B:771:VAL:HG13	1:B:792:PHE:HE1	1.87	0.40
1:A:400:MSE:HG2	1:A:456:LEU:HD22	2.03	0.40
1:A:458:GLU:HA	1:A:461:ARG:HG3	2.03	0.40
1:A:754:LEU:CD1	1:A:756:ARG:HG2	2.47	0.40
1:A:203:LEU:CD1	1:A:307:ILE:HG23	2.50	0.40
1:A:293:GLY:O	1:A:294:LEU:HG	2.21	0.40
1:A:374:ALA:N	1:A:444:THR:HG21	2.36	0.40
1:A:686:ARG:CG	1:A:688:ALA:HB2	2.51	0.40
1:A:792:PHE:O	1:A:796:ILE:HG12	2.21	0.40
1:A:924:LYS:HA	1:A:964:ASP:OD1	2.21	0.40
1:A:1126:PHE:CZ	1:A:1131:GLY:HA3	2.57	0.40
1:B:336:ILE:O	1:B:337:GLN:C	2.65	0.40
1:B:722:LEU:N	1:B:743:LYS:O	2.43	0.40
1:B:783:LEU:HD13	1:B:885:VAL:HG13	2.02	0.40
1:B:926:MSE:HE2	1:B:926:MSE:HB3	1.98	0.40
1:B:961:MSE:HE2	1:B:1002:ARG:O	2.21	0.40
1:B:1156:LEU:HD12	1:B:1301:HIS:HD2	1.86	0.40
1:A:324:ASP:OD1	1:A:326:SER:OG	2.39	0.40
1:A:338:THR:HG23	1:A:339:ILE:N	2.36	0.40
1:A:754:LEU:HD13	1:A:754:LEU:HA	1.97	0.40
1:A:1005:LEU:HD23	1:A:1005:LEU:HA	1.84	0.40
1:A:1496:VAL:HG13	1:A:1513:ILE:HG23	2.04	0.40
1:B:246:PRO:O	1:B:248:LEU:HG	2.20	0.40
1:B:261:THR:HA	1:B:380:PHE:HZ	1.86	0.40
1:B:262:MSE:HA	1:B:263:PRO:HD3	1.90	0.40
1:B:541:SER:HB2	1:B:544:GLU:OE1	2.21	0.40
1:B:707:THR:O	1:B:711:LEU:HD13	2.21	0.40
1:B:1228:LEU:HD23	1:B:1228:LEU:HA	1.91	0.40
1:A:554:VAL:HG12	1:A:581:PRO:HA	2.04	0.40
1:B:343:GLU:OE2	1:B:428:HIS:CD2	2.74	0.40
1:B:618:PHE:HE1	1:B:658:LEU:HD12	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1544/1611 (96%)	1488 (96%)	50 (3%)	6 (0%)	30	68
1	B	1556/1611 (97%)	1499 (96%)	52 (3%)	5 (0%)	37	72
All	All	3100/3222 (96%)	2987 (96%)	102 (3%)	11 (0%)	30	68

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	462	ASN
1	B	462	ASN
1	A	187	ASP
1	B	187	ASP
1	B	326	SER
1	A	265	TYR
1	A	326	SER
1	B	265	TYR
1	A	329	GLY
1	A	360	VAL
1	B	329	GLY

5.3.2 Protein sidechains

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1257/1266 (99%)	1249 (99%)	8 (1%)	84	88
1	B	1263/1266 (100%)	1254 (99%)	9 (1%)	81	87

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	2520/2532 (100%)	2503 (99%)	17 (1%)	81	87

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MSE
1	A	2	ILE
1	A	119	VAL
1	A	330	GLN
1	A	338	THR
1	A	348	SER
1	A	394	THR
1	A	545	LEU
1	B	1	MSE
1	B	2	ILE
1	B	119	VAL
1	B	240	LEU
1	B	330	GLN
1	B	338	THR
1	B	394	THR
1	B	441	SER
1	B	545	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	103	ASN
1	A	219	GLN
1	A	322	HIS
1	A	499	GLN
1	A	803	GLN
1	A	968	ASN
1	A	1190	ASN
1	A	1225	ASN
1	B	79	GLN
1	B	103	ASN
1	B	219	GLN
1	B	322	HIS
1	B	499	GLN
1	B	803	GLN
1	B	968	ASN

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Mol	Chain	Res	Type
1	B	1193	GLN
1	B	1225	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1527/1611 (94%)	-0.09	27 (1%) 67 55	366, 451, 525, 581	0
1	B	1537/1611 (95%)	-0.08	28 (1%) 67 55	364, 455, 529, 592	0
All	All	3064/3222 (95%)	-0.09	55 (1%) 67 55	364, 453, 527, 592	0

All (55) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	1286	PHE	5.4
1	A	381	VAL	4.6
1	A	64	PRO	3.5
1	B	1297	GLU	3.3
1	A	423	PRO	3.3
1	A	372	LEU	3.2
1	B	1113	GLY	3.2
1	A	383	CYS	3.2
1	A	408	LEU	3.1
1	B	5	LEU	3.0
1	B	404	LEU	2.9
1	B	915	SER	2.9
1	B	1073	ASN	2.9
1	B	567	THR	2.8
1	A	1286	PHE	2.7
1	B	1545	TRP	2.7
1	B	1111	GLY	2.6
1	A	333	ARG	2.5
1	A	452	ILE	2.5
1	B	1322	ILE	2.5
1	B	980	ALA	2.5
1	A	1278	PHE	2.5
1	A	742	PHE	2.5
1	A	261	THR	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	956	VAL	2.4
1	A	488	PHE	2.4
1	B	213	VAL	2.4
1	B	1063	ILE	2.4
1	B	1516	ASP	2.4
1	A	1414	LEU	2.3
1	A	158	GLY	2.3
1	B	1464	ASP	2.3
1	A	450	SER	2.3
1	B	430	THR	2.3
1	A	434	PRO	2.3
1	A	1395	PRO	2.2
1	A	392	TYR	2.2
1	B	468	ILE	2.2
1	A	1340	VAL	2.2
1	B	693	ALA	2.2
1	B	1144	VAL	2.2
1	B	508	ILE	2.2
1	B	520	LEU	2.1
1	B	1454	LEU	2.1
1	A	1322	ILE	2.1
1	B	386	TYR	2.1
1	A	387	LEU	2.1
1	B	1340	VAL	2.1
1	A	73	LEU	2.1
1	A	47	TYR	2.0
1	B	1399	ALA	2.0
1	A	695	VAL	2.0
1	A	1303	LEU	2.0
1	B	1576	VAL	2.0
1	A	152	ALA	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.